

Monitoring and Evaluation Report – Fiscal Year 1998

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Summary

Forest Monitoring Activities

The implementation of the Shasta-Trinity National Forests Land and Resource Management Plan (LRMP) establishes the framework for translating management direction into goals, objectives, and standards for on-the-ground projects. Monitoring and evaluating the implementation process, effects and outputs helps determine how well the Forest Plan objectives are being met and how closely standards and guidelines are being followed.

The Shasta-Trinity LRMP incorporates the standards and guidelines from the President's Northwest Forest Plan and monitoring guidance from the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD).

Shasta-Trinity National Forests Monitoring System

Monitoring Scales - Information obtained through the monitoring and evaluation system was reported at several different geographic scales including individual project areas, management areas, watersheds, and the Forest as a whole. For this report, information was collected at both the District and Forest scale with District information aggregated up to the Forest level whenever possible.

Monitoring Levels - Information for this report was derived from 3 levels of monitoring:

1. Project Environmental Analysis
2. Single Resource - Forest Program Assessment
3. Forest-wide Multiple Resource Assessment

Each level consists of two components: data acquisition and administrative review. Data acquisition refers to the collection and processing of environmental data. Administrative review refers to program analysis after the information has been evaluated and compared with Forest Plan objectives, standards, and guidelines.

The Forest database will be updated periodically. Each of the above levels will contribute to the process, but project level assessments will be the most often used means of insuring that District level information is incorporated into the broader Forest data-base.

Project Environmental Analysis - One of the common processes available for monitoring is project environmental analysis where on-the-ground information is compared with the existing data-base. This information is used to verify assigned management area prescriptions, projected outputs, and objectives originating from the Forest Plan for updating, if necessary.

Single Resource-Forest Program Assessment - The next level is a Forest-wide assessment of single resources and Forest programs. For example, single resources such as bald eagle habitat or anadromous fisheries are site-specific, but they may not coincide with project environmental assessments.

Forest-wide Multiple Resource Assessment - The Forest-wide scheme includes intensive field surveys and high resolution remote sensing data which provides the framework for monitoring single resources and Forest programs. As in the other two levels, information obtained in these assessments will be used for updating the existing data-base for multiple resources and comparing results with Forest objectives.

For FY 1998, the Shasta-Trinity used an interdisciplinary team to review the standards and guidelines prioritized for evaluation in FY 1997 report. The team determined that, except for the addition of item in recreation, the same set of standards and guidelines would be used for this year's report. These standards from the Forest Plan represent the standards and guidelines and management concepts that are most critical for implementation monitoring. A questionnaire was used similar to last year's form to collect monitoring data from district personnel and various resource specialists. Input from the questionnaire was summarized, assessed and aggregated up to the Forest level wherever possible for inclusion into this report.

Activities monitored during FY 1998 as part of the Forest's monitoring and evaluation program included; wildlife and fisheries habitat condition and the presence of selected Threatened, Endangered and Sensitive (TES) species reforestation success, thinning and release, timber sales, and inventories of cultural sites. Outputs associated with habitat improvement projects, livestock grazing, timber products, roads, and fuel management were also monitored.

The Forest also monitored conditions from the Forest Plan including the Aquatic Conservation Strategy (ACS) objectives and Survey and Manage species for which protocols existed.

Other monitoring items included actions taken to assist Rural Development and Community Development Program goals, completion of Watershed Analyses (WA) and Late Successional Reserve (LSR) Assessments. Actions taken to improve relationships with elected representatives of Native American Indian Tribes were also monitored.

Elements identified in Chapters 4 and 5 of the Forest Plan that were monitored and reported on a Forest-wide basis in FY 1998 included soil productivity, Best Management Practices, habitat restoration, inventories of species/habitats, inventories of special habitat components, application of selected standards and guidelines and verification of inventories of cultural sites.

Refer to the appendix for additional information on monitored activities.

Evaluation of Monitoring Results

Physical Environment

Cumulative Watershed Effects applications were monitored for consistency and use according to the intent of the process. Three applications on a total of 19,146 acres were found to have been appropriately used in FY 1998. Best Management Practices (BMPs) for protection of soil and water resources were monitored in accordance with the regional protocol. Of the 29 BMP applications monitored 17 were implemented effectively, and 12 were not. Follow-up action pertaining to the inadequately applied BMPs

included consultation with the North Coast Water Quality Control Board and the development of a corrective action plan, with implementation scheduled to begin in 1999. Soil Quality Standards were met in most locations on the Forests, except for the Elk Gulch II Timber Sale area where 4 of 7 sample sites showed less than the standard ground cover. Additional monitoring is planned, including a long term trend analysis of the area. Few watershed restoration projects were monitored in FY 1998 due to the lower level of project implementation during this time period. Watershed condition monitoring focused on trends in water temperatures across the Forests. FY 1998 monitoring continued the long term monitoring of the South Fork Trinity River and the upper Sacramento River, and was expanded to include new sites in the McCloud River basin.

Biological Environment

Fisheries, Key Watershed, Aquatic Conservation Strategy: Monitoring techniques for fisheries in Shasta and Trinity Lakes continue to be successfully implemented. Our monitoring suggests that enhancement work provides an increase in the abundance and growth rate of warm water gamefishes.

Strategies for successfully monitoring and analyzing stream fisheries are more problematic and several recommendations are made for using new protocols in the attached appendix. In the 1996 monitoring report we identified the need to move to a more holistic approach to ecosystem monitoring, especially in the aquatic area. In 1997 we adopted a forest level strategy using a multi-disciplinary team to meet the following goal: Provide for a high probability of maintaining resident and anadromous native fish communities (including coho and Chinook salmon, steelhead and redband trout) and their habitat in all major forest aquatic ecosystems.

In 1998, we found that redband trout populations and habitat are stable, but that opportunities exist to improve redband habitat and better ensure their future survival. A redband conservation agreement was completed with these thoughts in mind. Unfortunately, in 1998 we found a continued general decline in the returns of naturally spawning anadromous fish, although we documented that our actions met ACS objectives and are consistent with the direction given for managing Key Watersheds. It has been suggested that the decline is due to habitat conditions and activities beyond the lands we manage. However, as the Forest Plan suggests, we believe we have management opportunities to help reverse the decline. There is a need to develop better monitoring strategies and partnerships that help ensure that our management actions provide a high probability of maintaining and restoring the health of our aquatic communities and the survival of populations of specific fish species, such as salmon and steelhead per the LRMP and ACS objectives.

Terrestrial wildlife population monitoring: Monitoring continued for threatened, endangered, or Forest Service sensitive species, such as bald eagle, spotted owl, and goshawk.

Botany: Monitoring occurs at both the project and landscape level. Results indicate that programs are successfully implementing associated standards and guidelines.

Resource Management

Fuels: In 1998 there were 1,582 acres of activity fuels burned and 5,140 acres of natural fuels treated for a total of 6722 acres treated. Compared to 1997 this represents an increase of 2,750 acres of natural fuel treatment and a decrease of 368 acres of activity fuel treatment. Monitoring of the fuels program indicates again this year, that individual burning projects are successful in meeting standards and guidelines. Post-burn evaluations consistently monitor projects for to assess how well project objectives were met. A forestwide analysis was completed in 1998 that mapped hazard and risk for the entire Shasta-Trinity NF. This baseline can now be updated for specific treatments and rerun to evaluate the overall effects of treatments in meeting desired fuels conditions.

Timber: The timber volume offered for sale in FY 1998 was 100% of the 82 MMBF allowable sale quantity (ASQ) in the Forest Plan. The Forest exceeded the intermediate and salvage cutting objectives in FY 1998, but cut below the acres specified in the Forest Plan for regeneration harvest. Monitoring has shown that with limited regeneration cutting occurring within the Matrix and AMA, the Forest is not moving towards a regulated condition which would provide for the long-term sustained yield in these areas, as specified in the Forest Plan.

Reforestation acres accomplished in FY 1998 was about 47% less than the 3500 acre objective in the Forest Plan due to the current emphasis on thinnings and salvage. The Forest certified about 94% of the regeneration harvest acres that occurred in FY 1993 as being adequately stocked and meeting Forest Plan objectives. The Forest accomplished more acres of timber stand improvement (168%) than specified in the Forest Plan due to a backlog of TSI work in plantations.

Although no volume targets for biomass were established in the Forest Plan, about 40,300 MBF of biomass (chips) were sold in FY 1998. Biomass opportunities will continue to be explored as long as markets exist and funding is available.

Forest Pest Management: Yearly aerial surveys are conducted to monitor and develop a database of mortality statistics on the Forest. Mortality was very low during 1998 due to a cumulative effect of favorable winter precipitation since 1993.

Range: Range readiness and utilization checks were conducted on all 20 active allotments. However, only 11 were monitored and/or administered to regional standards. Results of this monitoring effort indicated that these allotments meet or are moving towards meeting existing standards and management concepts. Eleven allotments was our agreed upon target with the region for the year. Special management of selected riparian areas continued and included the use of electric fencing and diligent distribution monitoring on the part of the permittees. This later effort was directed towards meeting the Forest-wide Aquatic Conservation Strategy. These efforts also included monitoring of some riparian areas within some of the MALAA (May Affect, Likely to Adversely Affect) allotments on the Trinity side. This helped the Forest to monitor some allotments which are of interest to the National Marine Fisheries Service.

Public Use and Information Programs

Wilderness/NRA: Monitoring and public service in the Mt. Shasta Wilderness continues to improve due to the fee-demo program. More wilderness rangers are covering the area and an independent, on-going report has provided additional data on customer use and satisfaction. In 1998 the Forest put on a series of community talks throughout Northern California informing climbers about the mountain and increasing their awareness of avalanche safety during the winter months. The Trinity Alps Wilderness program is under the oversight of a board of directors from the three participating forests who meet each spring to go over the implementation schedule and monitoring needs. The OHV site on the Shasta NF continues to receive a significant amount of monitoring due to its high profile, proximity to the urban interface, and active program partners.

Wild and Scenic Rivers: With the use of completed implementation guides and public/partner assistance, the wild and scenic character of designated rivers is continually improving.

Visual Quality: The 1998 visual quality program focused on the design needed to: (1) upgrade several developed recreation sites, (2) sponsoring the proposal for a new Scenic Byway (the Shasta Volcanic Scenic Byway), and (3) initiating an accessibility evaluation of recreation sites with an emphasis on visual quality. Construction and upgrade of the recreation sites will begin in FY1999. The Scenic Byway proposal will be submitted by the end of FY 1999.

Heritage Resources: The Forest completed its second year of operation under the 1997 Programmatic Agreement with the State of California and the Advisory Council of Historic Preservation which allows the forest to utilize an alternative compliance process for Section 106 of the National Preservation Act. The Programmatic Agreement allows for a more flexible, timely and effective compliance process in the majority of projects. The Forest submitted its second year's report under this agreement and was found to be meeting all the terms and conditions of the Agreement including a monitoring evaluation.

Social and Economic Environment

Hayfork Adaptive Management Area (AMA): A grant to the Hayfork Watershed Research and Training Center provided funding to monitor socio-economic trends in Trinity County, continue the operation of the small diameter unitization/marketing program and offer advanced training in the areas of survey, inventory and monitoring.

Rural Development: Seventeen rural community grants were awarded in fiscal year 1998. Grants were aimed at (1) helping communities to increase their competitive standing for Federal, State and county contracts, (2) promoting tourism in Northern California, (3) developing a marketing cooperative based on cottage industry goods, and (4) developing a community based forestry through service contracts.

Modeling Changes to Forest Land and Resource Management Plan

During 1998 the Forest mapped additional survey and manage sites where management activities are restricted. In January 1998 the Chief announced a proposed policy to suspend road construction and reconstruction in roadless areas. The Forest agreed to suspend any road construction in roadless areas awaiting the final policy.

Monitoring at Other Scales

The Northwest Forest Plan Implementation Monitoring Team selected one sale on the Shasta-Trinity in 1998 for review. This sale, the Flow Multiproduct Timber Sale, was reviewed by an interagency field team and found to be in 100% compliance with the standards and guidelines from the Northwest Forest Plan.

Recommended Monitoring of Natural Resources for FY 1998:

Monitoring Item	Recommendations for Future Monitoring
Cumulative Watershed Effects (CWE)	Continue CWE monitoring
Best Management Practices (BMPs)	Continue BMP monitoring
Soil quality and productivity	Continue
Watershed restoration	Continue, increase watershed specialist input
Slope stability and watershed condition	Continue
Fisheries management	Continue
Key Watersheds	Continue, combine with Watershed Restoration
Aquatic Conservation Strategy (ACS)	Continue, expand analysis of fuels reduction, forest-level monitoring
Threatened and Endangered Species (TES)	Continue
Late-Successional Reserve Assessments (LSRA)	Complete assessment
Botany, project level	Continue, use streamlined memo w/no significant impacts
Botany, conservation strategies	Continue with priority strategies
Biological diversity	Continue
Watchable wildlife	Continue
Manage habitat for neotropical migrant birds	Continue
Improve distribution of drinking water for wildlife	Continue
FFuel treatment	Continue
Timber harvest outputs and methods	Continue
Cultural treatment, certification	Continue
Timber stand improvement	Continue
Biomass	Continue
Facilities, road maintenance	Continue
Facilities, road closure	Continue, follow formal road closure process
Facilities, bridge safety	Continue, use contracts for backlog
Facilities, water sources	Continue
Forest Pest Management (FPM)	Continue
Range condition/suitability and utilization	Continue
Chaparral	Continue
Special Areas	Continue
Adaptive Management Area programs (AMA)	Continue
Rural development, new products	Continue
Rural development, economic diversity	Continue
Community development, partnerships	Continue
Tribal government, partnership and consultation	Continue
Forest Plan implementation, NEPA	Continue
NW Forest Plan Monitoring, Province Advisory Council (PAC)	Continue, per agreement with PAC

Recommended Monitoring of Public Use and Information Programs for FY 1998:

Monitoring Item	Recommendations for Future Monitoring
WILD AND SCENIC (W&S) RIVER Implement mgt. plans (guides) using LAC for existing W&S Rivers	Continue to evaluate all proposed activities via Mgt. Plans
Protect 1/4 boundary on proposed W&S Rivers	Continue at project level according to Forest Plan
WILDERNESS Develop Implementation Guides using LAC for high use Wilderness areas.	Continue using LAC
Post potential encroachment sites	Continue program
Visitor information programs	Continue programs
Wilderness water quality	Establish protocols for yearly sampling
RECREATION Manage sites according to Recreation Opportunity Spectrum (ROS), use partnerships to assist.	Continue partnerships to assist monitoring
Provide interpretive services including recreation opportunity guides (ROGs)	Continue monitoring and development of ROGs
Identify and develop potential OHV trails	Continue partnerships to locate potential trails
Significant caves	Continue listing process
VISUAL QUALITY Determine if visual resource management (VRM) standards are being followed, and visual quality objectives (VQOs) are being met	Provide more training to ID Teams, especially in area of visually sensitive foreground.
HERITAGE Inventory, evaluate site for eligibility National Register	Continue, tied to 106 Programmatic Agreement
Compliance with Section 106 for existing sites	Continue, tied to 106 Programmatic Agreement
LAW ENFORCEMENT Monitor prevention, violation, investigation	Continue
MINERALS Minerals activities	Continue, on a case by case basis

Action Plan

- Obtain clarification from the Regional Ecosystem Office (REO) on the process to be used for Survey and Manage species status reviews. The Forest Wildlife Biologist continued to serve as a member of the Survey and Manage Core Team in Portland in 1998. She is providing clarification on Survey and Manage process directly to the Forest.
- Develop systems for collection, assessment and reporting of road status data for the Forest. The Forest, along with the Region, is working on a project to link the Transportation Information System (TIS) to the Geographic Information System (GIS). This will provide an excellent tool for tracking constructed, reconstructed, and decommissioned system roads.

Short-term Strategy

The Forest's short-term strategy will continue to emphasize monitoring of the implementation of the Forest Land and Resource Management Plan at the project and landscape levels. The questionnaire

developed for this year's report was based on forest goals, standards and guidelines selected by each management and resource area. This method will continue to be used for next year.

Long-term Strategy

The primary objective of the long-term strategy will be to monitor implementation over the planning period, evaluate effectiveness and validate assumptions that may require adjustments to the Forest Land and Resource Management Plan. This strategy will be the primary mechanism for validation monitoring, but will incorporate implementation and effectiveness monitoring as well.

In addition, the Forest will pursue the possibility of developing a combined monitoring strategy with the four Northern California forests. The objective will be to provide more monitoring consistency and efficiencies among the four forests.

Potential Forest Plan Amendments

No Forest plan amendments have been proposed at this time. Potential amendment may be analyzed due to pending management recommendations for the several survey and manage species.

Research Needs and Projects

1. Continue research on the social and economic conditions in rural timber counties:
During FY 1998 the report "Community-based Socioeconomic Assessment and Monitoring of Activities Related to National Forest Management" was published through the Hayfork Watershed Research Training Center. This year's report presents key findings on Trinity county income and unemployment related to timber harvest volumes and values. Monitoring of National Forest work explores the relationship of the size and type of timber sales versus the award of contracts to Trinity purchasers.
2. Conduct biological studies to obtain information needed to develop Conservation Strategies for sensitive plants. Such research would include studies of distribution, habitat requirements, population dynamics, and responses to management activities. These studies would include information necessary to supplement existing data to assure the continuation of reproducing plants throughout the range of the species. The Watershed Center in Hayfork has conducted regeneration trials on Prince's Pine using a Geographical Information System (GIS) to model the distribution of non-timber resources and the impacts of harvesting. Expand research into sustainability of non-timber forest products, especially medicinal plants.
3. Continue research into the characteristics and dynamics of the black stain root disease on timber stands in the McCloud Flats area. PSW-Redding monitored the abundance of the suspected insect vectors of blackstain root disease in the spring 1996 prescribed burn at McCloud Flats. Forest Pest Management installed blackstain root disease monitoring plots in the spring 1996 burn. It will be several years before it will be known whether spring burning has an effect on the spread of the disease. There was no activity on this project during 1998.

4. Continue research on the relationships between vegetative disturbance in late-successional forests and spotted owl habitat. The objective is to attempt to establish more clearly defined thresholds of population viability. PSW-Redding continues to analyze data from a long-term study in the Upper South Fork of the Sacramento (the Eddy Mountains) to use charcoal in lake sediment to establish the long-term fire frequency. The PSW-Arcata lab has an ongoing project involving Spotted Owl habitat in the Hayfork AMA. This research need has been modified to an objective of establishing the historic fire frequency and the long-term dynamics of ecosystems on the Forest. Lake and headwater sediment cores are providing information based on pollen and charcoal dating along with fire scar history in these areas.
5. Continue research on the effects of logging and road construction on sediment delivery, runoff, and water quality using localized information or other means. The Watershed Center in Hayfork in cooperation with the PSW-Redding has been studying the impacts on the soil using a small yarder. Research continued in 1998.
6. Conduct research to assess the role of fire suppression and fuels management in meeting habitat needs for different species of wildlife. PSW-Redding is analyzing data collected for a landscape level fire history in the Hayfork AMA. Research continued in 1998.

Report Preparers

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Location of Supporting Documentation

The supporting information for this report is on file at the Supervisor's Office and at Ranger District Offices. Refer to the appendix for specific documents and their locations by functional area.

Public Participation Plan

A notice of the FY 1998 Monitoring and Evaluation Report will be mailed to those on the Forest Plan mailing list. This report will also be available for review on the forest web site.

This document can be accessed on the internet at the following address:

www.fs.fed.us/r5/shastatrinity

Appendix

This appendix provides background information for the Fiscal Year (FY) 1998 Monitoring and Evaluation Report. It is organized by resource area. The supporting documentation for the Monitoring and Evaluation Report is at the Supervisor's Office or at the District Offices.

- **Shasta-Trinity National Forests Supervisor's Office**

3644 Avtech Parkway
Redding, CA 96002
(530) 226-2500

- **Big Bar Ranger District**

Star Route 1, Box 10
Big Bar, CA 96010
(530) 623-6106

- **Hayfork Ranger District**

P.O. Box 159
Hayfork, CA 96041
(530) 628-5227

- **McCloud Ranger District**

P.O. Box 1620
McCloud, CA 96057
(530) 964-2184

- **Mt. Shasta Ranger District**

204 West Alma
Mt. Shasta, CA 96067
(530) 926-4511

- **Shasta Lake Ranger District**

14225 Holiday Drive
Redding, CA
(530) 275-1587

- **Weaverville Ranger District**

P.O. Box 1190
Weaverville, CA 96093
(530) 623-2121

- **Yolla Bolla Ranger District**

HC01 Box 400
Platina, CA 96076
(530) 352-4211

Physical Environment

Soil and Water (1)

Cumulative Watershed Effects (CWE)

Forest Plan Standard: Determination of Cumulative Watershed Effects. (Ref. Forest Plan, 4-18a)

Objectives: To determine if the following four criteria were met during Cumulative Watershed Effects (CWE) assessments in the preparation of watershed analysis and project planning documents: (1) the calculation of watershed sensitivity, (2) the calculation of the Threshold of Concern (TOC), (3) determination of Equivalent Roaded Area (ERA) within the established TOC, and (4) coordination with adjoining landowners.

Methods: The results from three CWE analyses were examined to verify the implementation of the CWE analysis method, and to determine if the recommendations coming out of the process are consistent with the process results. The three analyses were: Military, Beegum-Rock and Lower Hayfork NEPA documents.

Results: Beegum-Rock CWE: The Beegum-Rock NEPA document CWE analyzed 4,770 acres of the North Fork Beegum Creek watershed. In the implementation of the CWE process for the Beegum-Rock watershed procedures for determining watershed sensitivity, TOC and other landowner coordination were followed according to the accepted protocols, with consideration given to the local conditions affecting these factors.

Results of this analysis showed that the majority of past disturbances had occurred on or near the ridgelines in the North Fork Beegum Creek watershed. Overall the current level of disturbance was low relative to the TOC. The affect of the proposed alternative was to increase the ERA to the level equal to 32% of the TOC. It was concluded that this level was well within acceptable limits and no mitigation measures were prescribed to offset any increases in the ERA level of the North Fork Beegum Creek.

Results: Lower Hayfork CWEs: The Lower Hayfork NEPA document CWE analyzed 9,920 acres in the vicinity of the lower reach of Hayfork Creek, including the tributaries to the south of Hayfork Creek. Cumulative effects and ERA were calculated for 4 sub-basins where timber harvest was planned (Halfway, Jud Creek, Lower Rusch Creek and Upper Rusch Creek). In the implementation of the CWE process for these subwatersheds procedures for determining watershed sensitivity, TOC and other landowner coordination were followed according to the accepted protocols, with consideration given to the local conditions affecting these factors.

Results from the cumulative watershed effects analysis indicated that the ERA would not increase to more than 38% to 78% of the TOCs for the subwatersheds as a result of planned harvest and road construction activities. No mitigation measures were prescribed to offset any increases in the ERA levels of the Lower Hayfork subwatersheds.

Results: Military CWEs: The Military NEPA document CWE analyzed 4,756 acres in the Pilgrim Creek watershed on the eastern slopes of Mt. Shasta. The analysis was conducted for this particular

watershed due to the concern for populations of *Campanula wilkinsiana*. The concern was that a potential increase in peak flows in the streams resulting from harvest activities on both private and public lands would lead to a trend toward listing of this plant species. The total existing ERA for roads and past harvest was 230 acres (4.84% ERA) and the planned ERA was 45.5 acres (0.96% ERA). At this increased level of 5.8% ERA the Threshold of Concern of 16% would not be approached. The analysis determined, however, that small increases in peak flows could occur as a result of harvest activities. It was speculated that peak flow increases resulting from increased water availability for runoff would be small to nonexistent during winter storms when the ground was already saturated and slightly larger during summer convective storms due to higher antecedent soil moisture. A propagation and reintroduction of *Campanula wilkinsiana* in disturbed channels (Pilgrim Creek) was planned in the EA in order to mitigate concerns associated with increased peak flows.

Summary of Results: Use of the Cumulative Watershed Effects (CWE) methodology has the objective of measuring impacts of proposed management activities. Use of the CWE process is a form of monitoring watershed conditions with the objective of measuring impacts against an assumed threshold level. Monitoring the process of applying the CWE analysis ensures that watershed conditions are being considered and disclosed. All three applications of the CWE process reviewed used an evaluation of watershed sensitivity to determine individual watershed Threshold of Concern (TOC) values, and determined that the current and proposed activity generated Equivalent Roaded Area (ERA) would be within the established TOC. In addition the analyses considered activities of adjoining landowners.

Recommendations: Continue using the CWE analysis process as a monitoring tool of watershed condition and continue monitoring the use of the CWE process to ensure that it is being used correctly.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: Beegum-Rock and Lower Hayfork CWE results are located at the Hayfork District Office. The Military CWE analysis results are located at the McCloud District Office.

Soil and Water (2)

Best Management Practices: BMPs

Forest Plan Standard: Implementation of Best Management Practices for protection or improvement of water quality. (Ref: Forest Plan 4-18 c.)

Objectives: To determine if BMPs were implemented as prescribed in the BMP handbook. To determine if BMPs were successfully implemented at selected sites where BMPs had been prescribed. To determine if the BMPs as implemented were effective for their intended purpose.

Methods: Randomly selected sites from five timber sales assessed the BMPs to verify the implementation and to determine the effectiveness of BMPs as they were applied. The specific BMPs were: Streamside Management Zones, Skid Trails, Suspended Yarding, Landings, Timber Administration, Meadow Protection, Road Surface and Slope Protection, Stream Crossings, Temporary Roads, Designated Swimming Areas, Developed Recreation Sites, Vegetation Manipulation and Prescribed Fire.

Results: The table below shows the specific BMPs that were monitored in FY 1998. Of the 29 BMP applications monitored, 17 were found to be effective in their application and 12 were not. Most of the BMP applications not found to be effective were on the Elk Gulch II Timber Sale. The problems primarily associated with tractor logging on steep (greater than 35%) slopes resulting in excessive soil disturbance, skid trails in inappropriate locations, skidding in a stream channel, lack of waterbars on skid trails, roads with inadequate drainage structures in improper locations. In addition BMPs that were called for in the EA were not implemented.

Once reported the Forest followed up with several on-site visits to determine specific problems and corrective actions. A representative of the North Coast Water Quality Control Board was invited to visit the site and concur on defining the problem areas and determining corrective actions.

Specific BMPs Monitored and Results Meeting Effectiveness Standards

Standard or Objective	Activity	Areas Sampled	Areas Met	Percent Met (%)
BMP 1.8, 1.19, 1.22	Streamside Management Zone	3	1	33
BMP 1.10, 1.17	Tractor Skidding Design	5	1	20
BMP 1.11	Suspended Yarding	2	2	100
BMP 1.12, 1.16	Landing Location	8	5	62.5
BMP 1.18, 1.22, 5.3	Meadow Protection	2	2	100
BMP 2.2, .4, .5, .7, .10, .23	Road Surface, Drainage	2	0	0
BMP 2.1, .4, .5, .7, .10, .23	Stream Crossings	1	0	0
BMP 2.16, 2.26	Temporary Roads	1	1	100
BMP 4.1, 4.2	Designated Swim Sites	1	1	100
BMP 4.3, .4, .5, .6, .9, .10	Developed Recreation	1	1	100
BMP 5.1, 5.2, 5.5	Vegetation Management	2	2	100
BMP 6.3	Prescribed Fire	1	1	100

Recommendations: Site specific recommendations were made for the sites where BMPs were found to not be effective. After consultation with the North Coast Water Quality Control Board field representative a K-V Plan for the Elk Gulch II sale area was modified in early 1999 and will begin to be implemented in the summer of 1999 to improve erosion hazards associated with road drainage structures, skid trails, and one stream crossing. Tractor logging be restricted to less than 35% slopes and pitches greater than 35% be endlined. All BMPs and mitigating measures required to protect the soil and water be implemented and enforced.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: The results of the BMP monitoring are stored in the Regional BMPEP Database as well as on a Forest database. The Forest Supervisor’s Office, Redding, CA also has the original data collection forms.

Soil and Water (3)

Soil Quality Standards and Soil Productivity

Forest Plan Standards: Implement forest soil quality standards as they relate to highly erodible soil. (Ref: Forest Plan 4-18 e. Protection of soil productivity).

Objectives: To determine if soil erosion hazard assessments were used in planning of forest management activities. To determine if ground cover and fine organic matter objectives were met after logging. Forest Service guidelines require a minimum of 51% organic material ground cover, uniformly distributed, on non-granitic soils, after harvesting activities. The percent is increased to greater than 90% on granitic soils. An exception is made on ash soils of the McCloud Flats. These soils are relatively coarse textured with a very high infiltration and permeability rates.

Methods: Three 100 step transects (300 ft. each) were taken across each monitored unit and the data averaged for the unit. The location of the transect were randomly selected. Monitoring sites was on four timber sales - Pilgrim, Chippy, Elk Gulch II and Un-Papoose-, and one Wildlife Burn area. All were on non-granitic sites.

Results: The units on the Pilgrim and Chippy Timber Sales are located on the McCloud Flats and are unique in regards to our normal concerns associated with logging. In order to control grass and brush competition, the District's policy is to rip and cultivate the entire unit including skid trails, landings and, in some cases, the access road leaving no ground cover. However erosion is virtually non-existent in this area. As for soil productivity, the churning of the organic matter into the soil will likely hasten decomposition, which would improve the productivity of the soil. The results of the retained organic material on Elk Gulch II and Un-Papoose sale areas were 37%, 55%, 51%, 53%, 40%, 43%, and 40%. The organic material retained on a hand pile unit was 82% and on a wildlife burn was 75%.

Recommendation: As with the BMPs site specific recommendations were made for the sites where the SQS were found to not be attained. After consultation with the North Coast Water Quality Control Board field representative a K-V Plan for the Elk Gulch II sale area was modified in early 1999 and will be implemented beginning in the summer of 1999 to improve erosion hazards associated with road drainage structures, skid trails, and one stream crossing. Tractor logging be restricted to less than 35% slopes and pitches greater than 35% be endlined. All BMPs and mitigating measures required to protect the soil and water be implemented and enforced. Continue monitoring soil quality standards.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: Forest Supervisor's Office, Redding, California

Soil and Water (4)

Watershed Restoration

Forest Plan Standards: Identify and treat areas with degraded watershed condition. (Ref: Forest Plan 4-18 f.)

Monitoring Objectives: To determine if watershed restoration projects were implemented as planned. To determine if the watershed restoration practices implemented were effective in achieving desired results.

Methods: Contracts through contract administration were monitored. The Forest monitored implementation of field work by selecting a sample of road segments and following the monitoring methods of the Region's Best Management Practices Evaluation Process. The field sites were evaluated following the winter after the projects were completed.

Results: Intermittent stream channel restoration - Still Timber Sale: The effectiveness of restoration work on an intermittent stream channel was evaluated qualitatively in the spring of 1998. The physical integrity of the channel had been damaged extensively because the channel was not protected during the Still Timber Sale. Restoration activities were only partially successful in preventing further downcutting of the channel and restoring natural channel pattern. Instream structures effectively trapped sediment and confined channel flow in the upper reaches of the project area. Some of the larger check dams failed in the lower reaches of the project area despite being anchored into the surrounding slopes. These structures were undercut. Placement of erosion control fabric or some other lining material in the channel bed would have improved these structures and may have prevented failure.

Tate Creek Restoration Project: Initial monitoring work was begun on Tate Creek. Monitoring efforts consisted of collecting baseline data prior to actual project implementation including channel cross-sections and longitudinal profiles. The profiles are being used in conjunction with other data in order to design the restoration project. The cross-sections and longitudinal profiles will be resurveyed in subsequent years in order to monitor the effects of restoration activities planned for FY 99.

Hawkins Creek Watershed Improvement Needs Inventory: This inventory was completed for the Hawkins Creek drainage in 1998. The inventory identified all erosion problems associated with roads in the drainage. The inventory also identified undersized culverts, areas of instability and recommended treatments. While not originally intended to be used as a monitoring tool, the Hawkins Creek WIN Inventory has proven to be useful in monitoring the effectiveness of past road construction practices in terms of their ability to withstand large storms and chronic disturbance from winter storms in general.

Recommendations: Design larger check dams with the use of erosion control fabric or the placement of other energy dissipating materials to prevent undercutting. Continue monitoring of watershed restoration activities.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: Shasta-McCloud Management Unit, McCloud California.

Soil and Water (5)

Slope Stability and Watershed Condition

Forest Plan Standards: Assess impacts of forest management on slope stability and watershed condition. (Ref: Forest Plan 4-18 i.)

Objectives: To determine what the long-term trends are for slope stability and watershed condition. There was no monitoring of trends in slope stability during FY 1998. Watershed condition trends are monitored through the evaluation of CWEs, previously discussed in this report, and by trends in water temperature, as reported below.

For water temperature the objectives of monitoring are: 1) Maintain a long-term trend monitoring program for the main channel of the South Fork Trinity River. The purpose is to assess efforts to restore fisheries of the South Fork Trinity by establishing a record of this most important water quality parameter. 2) Build a baseline data set for other rivers and streams to be used in the future for detecting changes in water temperature over time.

Methods: Hourly water temperatures at 35 locations were monitored across the Forest for the purpose of maintaining long-term data sets at some locations and establishing baseline data at other locations. Data were collected with programmable digital data recorders placed in the streams in the spring and removed in the fall. Data were then downloaded into a personal computer. Collected data were stored in spreadsheet format in both hourly and daily high-low data sets. Analysis of data includes determination of 7 day maximum temperatures, diurnal fluctuation, correlation with physical parameters in the watershed, and correlation with daily high air temperatures. All 1998 and earlier water temperature data was sent to the Forest Science Project (FSP) at Humboldt State University to be included in their data base. The FSP conducts statistical analysis of the data and provides interpretive information useful for comparing water temperature collection sites and detecting changes over time.

Results: Of the 35 sites monitored in 1998 29 were located at sites that have been previously monitored and 6 new sites were established. Twelve of the long term sites are located in the South Fork Trinity River watershed. All six of the new sites were located in the McCloud River watershed in order to establish baseline data in that area for future analysis.

Analysis of long term trend monitoring site data in the South Fork watershed show daily high water temperatures to be greatest in low elevation stream channels exposed to direct solar radiation. Larger channels with low gradient, shallow channel configurations show high water temperatures regardless of management intensity in the watershed upstream. The water temperature in the main channel of the South Fork Trinity River is well above ideal water temperature for cold water fish habitat. This condition results from physical exposure of the channel to direct solar radiation. Due to the width of the channel, additional riparian vegetation will not be an effective tool to reduce high water temperatures. Since this condition has historically occurred in this system, the historical fish run must have adapted to these temperatures by utilizing thermal refugia within the system. Present monitoring efforts have not discovered the nature of this refugia, if it exists.

Stream temperatures are highly correlated to air temperatures in the summer months. High summer water temperatures are naturally occurring in rivers and streams over much of the Forest. Riparian vegetation is a controlling factor on small streams but may have a less significant effect on large low gradient streams exposed to direct solar radiation.

Recommendations: Continue monitoring for trends in the South Fork Trinity River and tributaries at 19 locations; in tributaries of the main stem of the Trinity River at 5 locations; in the Sacramento River, McCloud River, Squaw Creek and Pit River watersheds at 18 locations. Establish new water temperature monitoring sites for baseline information on unmonitored streams in the South Fork Trinity River watershed at 5 locations. Monitor micro habitats in the South Fork Trinity River to determine source and abundance of thermal refugia.

Public Involvement: A landowner and local resident near the confluence of Plummer Creek and the South Fork Trinity River assisted the Forest Service in gathering temperature data from South Fork and Plummer Creeks.

Where is data located: South Fork Management Unit, Hayfork, California; Shasta-McCloud Management Unit, McCloud, California, and at the Forest Supervisor's Office, Redding, CA. Forest Science Project, Humboldt State University, Arcata, CA.

Biological Environment

Fisheries Management (1)

Forest Plan Standard: Emphasize sport fisheries as a major recreation activity by expanding recreational fishing opportunities. (Ref: Forest Plan Goals, page 4-4, # 12)

Monitoring Objectives: To determine fish response and abundance related to habitat improvement treatments compared with untreated areas in Shasta and Trinity Lakes.

Methods: Daytime Scuba and snorkeling direct observations of fish abundance and habitat utilization was conducted. Night electrofishing was also conducted to get the same information for fish use at night.

Results and Recommendations: Monitored 30 underwater brush structures and sub-sampled 75 acres of reservoir bottom, comparing them with untreated areas. It should be noted that the 75 acres had been seeded with herbaceous vegetation during the seasonal reservoir draw-down period, and the vegetation grew up prior to being inundated again as the reservoirs filled. We found (as suspected) that seeded areas that also received a mulch treatment had greater vegetative growth. The abundance for bass and other sunfishes was 3-5 times greater in treated than untreated areas. Young-of-the-year bass abundance was greatest within the seeded areas. The seeding projects provide additional inputs to the food chain and some fish cover, which is expected to increase the total productivity of these fisheries. The underwater brush structures provide escape cover for smaller fish and attract larger fish to prey upon them. We should continue to implement and monitor both types of project work to best enhance these fisheries to obtain partner and user satisfaction.

Public involvement: The Forest has established a Shasta Lake working group and a Trinity Lakes working group which includes the County Supervisors, U.S. Bureau of Reclamation, California Department of Fish and Game (CDF&G), California Department of Forestry and Fire Protection (CDF), local Fish and Game Commissions and local bass clubs. These groups provide oversight to the efforts on

Shasta and Trinity Lakes relative to habitat improvement for recreational fishing. A 20 year cooperative restoration plan has been developed for both lakes to focus program planning and accomplishments into the future. CDFG assists us in monitoring efforts by providing an electrofishing boat and crew.

Fisheries Management (2)

Forest Plan Standard: Emphasize the restoration of summer steelhead and spring-run Chinook salmon habitat in the South Fork Trinity River Basin. (Ref: Forest Plan Goals, page 4-4, #13)

Monitoring Objective: Detect changes in channel cross section geometry and bedload particle size, since these physical processes affect biological health. Previous inventories completed in the 1980s and 1990s did not provide us with sufficient focus to detect trend changes.

Methods: This work was implemented cooperatively with the Six rivers NF and funded primarily by a Trinity River Basin restoration grant. This work is intended to meet the needs of the effectiveness monitoring component of the South Fork TMDL. Base line monitoring was established along 4 stream reaches of the South Fork Trinity. Repeat monitoring will occur infrequently over time and will probably be triggered by stochastic flood events.

Data Collected: The work focused on channel response indicators, including channel cross sections, channel longitudinal profiles, bedload particle size, and photo points.

Results and Recommendations: Continue establishing more monitoring sites and conduct trend monitoring as funding and need dictates.

Fisheries Management (3)

Forest Plan Standard: Provide for the protection, maintenance, and improvement of wild trout and salmon habitat. (Ref: Forest Plan Goals, page 4-4, # 14)

1. McCloud River Redband Trout

Monitoring Objectives: McCloud River redband trout are a unique endemic fish to the McCloud River drainage. As an ongoing effort to ensure the continued survival of this fish, annual monitoring of habitat and population status are undertaken by the Forest.

Methods: Electrofishing was used this year to monitor the fish populations trend. Habitat typing was used to monitor for changes in habitat.

Data collected: Fish numbers and their size, and physical habitat features such as pool depth, length, and width are collected and stored in a computer database.

Results and Recommendations: One half mile of stream was monitored and trout numbers and habitat in 1998 are about the same as they were in 1997. It should be noted that a Conservation Agreement was completed in late 1998 with a number of partners, including the California Department of Fish and Game (CDF&G) and the U.S. Fish and Wildlife Service (USFWS). Maintain existing structures as needed. Conduct additional enhancement and monitoring work as needed per the recommendations of the Redband Core Group. Consider altering fish population monitoring to focus more on direct

observation than electrofishing whenever possible since it can have deleterious effects on the fish. Direct observation is the technique specified in the LRMP.

2. Spring Chinook and Summer Steelhead

Objectives: Annual trends in adult summer steelhead and spring chinook populations were monitored in the North Fork Trinity River, Canyon Creek, and South Fork Trinity River. Monitoring efforts have been ongoing since 1980.

Methods: The methodology used was direct observation with mask and snorkel by two or more divers per reach. Eighty miles of streams were inventoried.

Results: There is a large variation in the number of returning adult fish on an annual basis. Some of the variability can be explained through natural variations in runoff patterns, climate, and ocean conditions which often mask management related effects. Preliminary analysis shows fluctuating patterns in the amount of summer steelhead returning to the North Fork Trinity River, and Canyon Creek and in the amount of spring chinook returning to the South Fork Trinity River. Salmonid returns in all three streams have regularly been low compared to estimates of historic productivity. 1998 found the lowest return of summer steelhead adults to date, and one of the lowest known spring chinook returns as well. These low returns could be due to poor ocean conditions caused by El Nino.

Recommendations: Continue the monitoring program. Recommend coupling this work with direct observation dives of index reaches to monitor variations in juvenile production and juvenile habitat use and preference in these same streams. This would help identify if poor adult returns are related to habitat conditions that we can affect with our management. Recommend developing a long term plan and agreement with USFWS for monitoring these fish in New River.

Public involvement: The project was completed with help from numerous partners including: USFWS, CDFG, NMFS, Six Rivers NF, and several private citizens.

3. General findings related to monitoring to meet LRMP Requirements:

Limitations in the available budget have precluded phasing in all of the Fisheries monitoring identified in the LRMP Monitoring Action Plan. Recommend these items be prioritized and special attention given to implementing them as fully as possible. For example, TRMU plans to implement aquatic macroinvertebrate (MI) monitoring in the Trinity River related to enhancement work there. Other MI monitoring can be phased in on other index stream as program funding or project funding allows.

Key Watersheds (1)

Forest Plan Standard: Key Watersheds are highest priority for watershed restoration. (Ref: Forest plan page 4-59, Standards and Guidelines for key Watersheds)

Background: The Shasta-Trinity NF Aquatic Restoration Strategy was developed in 1997. This restoration plan that prioritizes watersheds where restoration work would have the greatest benefits for aquatic resources, in the shortest period of time, for the least amount of money. The strategy was adopted by the Forest Leadership Team. Other publics and agencies have also begun to use it as a basis for

extensive restoration planning in many of our headwater sub-basins particularly in the South Fork Trinity. This effort has proven to be an effective tool to focus restoration efforts into areas that are most likely to provide significant results in the least amount of time for the least amount of money.

Monitoring Objectives: Review watershed restoration planning and implementation to ensure that priority is given to key watersheds.

Methods: Review existing plans and planning documents for the thought process used in identifying and prioritizing restoration needs.

Data Collected: Existing information.

Results and Recommendations: Key watersheds are the highest priority for watershed restoration. Special focus has also been made in subwatersheds of the key watersheds to provide optimum returns for restoration efforts.

Public Involvement: Numerous agencies and public groups have helped in our key watershed restoration efforts.

Where is Data Located: South Fork Management Unit, Trinity River Management Unit and the Supervisor's Office, Redding, California.

Key Watersheds (2)

Forest Plan Standard: Outside Roadless Areas - Reduce existing system and nonsystem road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds. (Ref: Forest plan page 4-59, Standards and Guidelines for key Watersheds)

Monitoring Objectives: To document compliance with Standards and Guides to benefit water quality and anadromous stocks at risk.

Methods: Review watershed analyses, Environmental Assessments, and discuss transportation plans and needs with other specialists.

Data Collected: Information from recent planning processes.

Results and Recommendations: There was no net increase in road miles in Key Watersheds. Road decommissioning plans are in place to reduce 12 miles of road mileage in the Canyon Creek and South Fork Trinity River in 1999. Extra effort should be placed on transportation planning within key watersheds to meet LRMP guidance on key watersheds and ACS objectives.

Public Involvement: Numerous agencies and public groups were interviewed for their input concerning road decommissioning projects.

Where is Data Located: South Fork Management Unit, Trinity River Management Unit and the Supervisor's Office, Redding, California.

Aquatic Conservation Strategy (1)

(NOTE - Interrelated work to further the attainment of ACS objectives are discussed in the Watershed Restoration, Fisheries Management and Key Watershed sections.)

Forest Plan Standard: Aquatic Conservation Strategy Objectives: Implement the 9 objectives of the ACS. (Ref: Forest Plan page 4-53)

Specific reference, ACS objective #4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Monitoring Objective: Ensure that fisheries stream temperatures in key reaches are within the range that supports healthy populations of native anadromous fishes and other species. This monitoring item ties back in to the “Fisheries Management (3)” section of the report.

Methodology: Electronic data recorders (hydrothermographs) are placed in the streams in early summer and recovered in the fall. Sites are selected by fisheries and hydrology personnel. This data allows us to monitor water temperatures, especially as they affect fish and track long-term trends in habitat quality.

Data Collected: Daily variation in summer water temperatures in key stream locations around the Forest.

Results and Recommendations: The monitoring showed that stream temperatures are within the normal range of variability, but that some streams have better temperatures than others. Expand this effort as possible and continue monitoring to establish baselines and long term trends. This information provides a basis for identifying restoration opportunities and can highlight sensitive areas where special consideration is needed during planning processes to ensure ACS objectives are met.

Interdisciplinary Involvement: Hydrology and Fisheries.

Where is Data Located: South Fork Management Unit, Trinity River Management Unit, McCloud District office and the Supervisor’s Office, Redding, California.

Aquatic Conservation Strategy (2)

Forest Plan Standard: Aquatic Conservation Strategy Objectives: Implement the 9 objectives of the ACS. (Ref: Forest Plan page 4-53)

Monitoring Objective (Single Project): Document compliance with Terms and Conditions (T&Cs) of the National Marine Fisheries Service (NMFS) Biological Opinion for ongoing projects which are being implemented. These projects are:

1. SUPS for uses related to suction dredging
2. Road decommissioning
3. Grazing

4. Wet/Winter Hauling related to timber harvest

Methodology: Annual Forest reports are prepared concerning projects 1 to 3. The Forest furthers attainment of ACS objectives by minimizing out of season timber harvest and hauling activities. Monthly reports are given to NMFS during wet weather concerning active timber sales, road conditions, and how the Forest is meeting ACS objectives.

Data Collected: Mining claim evaluation forms; BMP evaluation forms.

Results and Recommendations: The monitoring showed that ACS objectives were being met. Recommend reviewing the sampling methodology in an interdisciplinary context to ensure the monitoring is well focused. Recommend reviewing the annual reports to NMFS in an interdisciplinary context to ensure that reports to NMFS are clearly understood. Also, additional monitoring is needed to monitor implementation of ACS in other arenas than NMFS T&C compliance.

Interdisciplinary Involvement: Monitoring and evaluation was completed by minerals, transportation, range and fisheries specialists, but the work was often more multidisciplinary than interdisciplinary. Future ACS monitoring should include other specialists as appropriate and involve working more closely together.

Where is Data Located: South Fork Management Unit, Trinity River Management Unit and the Supervisor's Office, Redding, California.

TES Species

Forest Goals and Standards: Monitor and protect habitat for federally listed threatened and endangered (T&E) and candidate species. Assist in recovery efforts for T&E species. Cooperate with the State to meet objectives for State-listed species. Manage habitat for sensitive plants and animals to prevent them from becoming a candidate for T&E status. Exclude management activities within occupied goshawks nest stands during the nesting period. Survey peregrine falcon and bald eagle populations and habitat to determine status and trend. (Ref: Forest Plan Goals, page 4-5 and Forest Prescription VII standards, page 4-43.)

As of October 1, 1998 the followed species are listed as threatened or endangered for the Shasta-Trinity National Forest.

Species	Scientific Name	Status
American peregrine falcon	<i>Falco peregrinus anatum</i>	Endangered
bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
northern spotted owl	<i>Strix occidentalis caurina</i>	Threatened
California red-legged frog	<i>Rana aurora draytonii</i>)	Threatened
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Threatened
coho salmon	<i>Oncorhynchus kisutch</i>	Threatened
delta smelt	<i>Hypomesus transpacificus</i>	Threatened
winter-run chinook salmon	<i>Oncorhynchus tshawytscha</i>	Endangered
Shasta crayfish	<i>Pacifastascus fortis</i>	Endangered
vernal pool tadpole shrimp	<i>Lepidus packardii</i>	Endangered
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened
McDonald's rock cress	<i>Arabis mcdonaldiana</i>	Endangered
Slender Orcutt grass	<i>Orcuttia tenuis</i>	Threatened

Examples of Monitoring

1. Peregrine Falcon Monitoring - Shasta N.F.

Objective: Visually monitored 2 historical peregrine falcon eyries to assess breeding status.

Methods: Used Region 5 peregrine protocol as a guide for monitoring 10 acres of peregrine habitat. Several visits were made to each site.

Results and Recommendations: This year occupancy was determined at only one of the sites. Professional judgment of the biologist is disturbance may have caused abandonment of the other eyrie. Recommend continue yearly monitoring.

Where is data located: Data from this project is located at the Mt. Shasta and McCloud Ranger Station wildlife offices.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent land owners.

2. Peregrine Falcon Monitoring - Trinity N.F.

Objective: Cooperate with the State to meet objectives of State Listed Species

Methods: The wildlife biologist on the South Fork Management Unit cooperated with the State of California in developing mitigation measures and providing monitoring data for a peregrine falcon eyrie located on private land surrounded by and accessed through National Forest land.

Results and Recommendations: Continue cooperative venture.

Where is data located: Data from this project is located at the Hayfork Ranger Station.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent land owners.

3. Spotted Owl monitoring - Shasta N.F.

Objective: Monitored spotted owl nesting territories to determine breeding status and monitored projects to determine presence as required to complete projects during limited operating period.

Methods: During FY 1998 40,000 acres of suitable owl habitat were surveyed on the Shasta McCloud Management Unit (SMMU). This included 9 projects and 20 historical territories. Region 5 spotted owl survey protocol was utilized and historical searches to determine breeding status. Information was coordinated with the State of California and adjacent private landowners.

Results and Recommendations: Found 1 nesting pairs and presence of owls in 6 territories. Owl nesting activity was lower than 1989-1997 monitoring results. Recommend continuing monitoring owl territories and projects to assess breeding status.

Where is data located: Data from this project is located in the statewide Strix database and at the Mt. Shasta and McCloud Ranger District wildlife offices.

4. Spotted Owl monitoring - Trinity N.F.

Objective: Monitor proposed projects to determine presence as required to complete projects during limited operating period.

Methods: During FY 1998 40,000 acres of suitable owl habitat were surveyed on the Southfork Management Unit (SFMU). T&E habitat was evaluated by reviewing vegetation maps, aerial photos and conducting some field work.

Where is data located: Data from this project is located at the Yolla Bolla and Hayfork District wildlife offices.

5. Bald Eagle Nest and Tree Monitoring - Shasta N.F.

Objective: Determine nest occupancy and breeding at three nest sites.

Methods: Several visits with observations at each site.

Results and Recommendations: Breeding was successful at two of the three sites. Sites were providing essential habitat for breeding. Recommend to continue yearly monitoring.

Where is data located: Data from this project is located at the Mt. Shasta and McCloud Ranger District wildlife offices.

6. Trinity Lake/Lewiston Lake Bald Eagle monitoring

Objective: Ensure land management activities will not threaten bald eagle nesting on the lakes.

Methods: Each site was visited at least three times to determine nesting success. Data was collected on the number of bald eagles at Trinity Lake in mid-January. The number of eaglets produced from 13 known nest sites was also collected. GPS location was recorded at 12 of the sites.

Results and Recommendations: Recommend GPS be used exclusively in the future for recording locations.

Where is data located: Data from this project is located at the Weaverville Ranger Station.

7. Maintain Goshawk Territories

Objective: McCloud Ranger District contains approximately 33 historical nesting territories. Nest searches were completed on all 33 territories in FY 1998. The standard is to protect the viability of the species and to assess individual territories on a project basis. Since 1992, 100-acre goshawk territories have been defined to include primary and alternate nest cores. During project preparation, habitat alteration is delayed or minimized in the 100-acre territories if nesting has occurred in recent years.

Methods: Walking surveys determined recent occupancy and nest success in 20 goshawk territories. Information was shared with California Department of Fish and Game and adjacent land owners.

Results and Recommendations: Nest searches were completed on all 33 territories and all were located with GPS to improve the accuracy of location in GIS. Four territories were occupied with nesting pairs. The validity of the 100-acre core territories will be visited on a project-by-project basis. Recommend to continue monitoring 100-acre nest territories.

Where is data located: Data from this project is located at the Mt. Shasta Ranger District wildlife office.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent landowners.

Late-Successional Reserves (1)

Forest Plan Standard: A management assessment should be prepared for each large Late-Successional Reserve (or group of smaller Late-Successional Reserves) before habitat activities are designed and implemented. (Ref: Forest Plan page 4-37)

Monitoring Objective: Late-Successional Reserves (LSRs) were developed to protect and enhance conditions of late-successional and old growth forest ecosystems, which serve as habitat for late-successional and old growth-related species. LSR Assessments will be completed to provide for management within LSRs to meet desired conditions.

Methods: Beginning in fiscal year 1997, projects and activities within LSRs require the completion of a comprehensive LSR assessment as described in the Forest Plan, page 4-37.

Results: The Clear Creek LSRA which started in 1997 was completed in 1998. The forestwide programmatic LSRA for the remaining 19 LSRs and 6 MLSAs on the forest progressed slowly during the beginning 1998 due to loss of personnel, however the effort was picked up again later in the year and the team expects to complete the project before the end of FY 1999.

Recommendations: Continue work on the programmatic LSRA.

Public Involvement: The programmatic LSRA consists of an interdisciplinary/interagency team of resource specialists. The public will be kept informed of team's progress in completing this document.

Where is data located: Supervisor's Office, Redding, California.

Botany (1)

Forest Plan Standard: Analyze, mitigate, and monitor project impacts to sensitive plants. (Ref: Forest Plan pages 4-14 and 4-16, #4a, b, c, Sensitive and Endemic Plants).

Monitoring Objective: To ensure that the Forest sensitive plant program effectively maintains the viability of sensitive and endemic plants on the Forest at the project level.

Method: Biological evaluations based on preliminary potential habitat evaluation using existing soils and TES plant data; field surveys of potential habitat in the areas to be affected by project implementation. Mitigation measures are developed by interdisciplinary teams and made part of project designs. Monitoring site visits are taken 1-2 years after project implementation. GIS botany coverages are updated annually.

Data Collected: Population numbers, size, location, and habitat; potential project impacts and proposed mitigations. For monitoring, whether mitigations were implemented as prescribed, and whether populations recovered or persisted as predicted by BEs.

Results: Ten new populations of sensitive plants were found and documented in FY 1998. Field surveys are completed for most large projects; a few small or dispersed projects (such as salvage sales) are analyzed with existing data. Plant BEs were written for 43 projects forest-wide. No sensitive plants on the Shasta-Trinity were proposed for listing by USFWS. Mitigations were developed for 10 projects in FY 1998 to lessen or eliminate project impacts to sensitive plants. In general, mitigations were implemented as written and were effective.

Recommendations: Continue field surveys at project level. Assess forest wide effectiveness of existing data analysis of smaller, dispersed projects.

Public Involvement: Through the NEPA process. Also organizations including the California Native Plant Society and the California Department of Fish and Game are involved in reviewing status of sensitive species list.

Where is data located: Project NEPA files, SO and district botany files, GIS coverages.

Botany (2)

Forest Plan Standard: Develop at least one conservation strategy per year. (Ref: Forest Plan page 4-16, #4f)

Monitoring Objective: To review compliance with our Forest standards, and effectiveness of our collaboration with other agencies in conserving sensitive plants.

Method: Office review of sensitive plant files.

Data Collected: Number and names of conservation strategies developed and/or signed in FY 1998.

Results: A conservation strategy for serpentine endemics of the Rattlesnake Terrane (Yolla Bolla and Hayfork RDs) was submitted for NFTE funding and was approved for Phase I, the survey and manage phase.

Recommendations: Use the multi-species, rather than single species strategy. Continue with the Rattlesnake Creek Terrain conservation strategy and the look to the Shasta-McCloud Management Unit to develop the multi-species strategy.

Public Involvement: No public involvement.

Where is data located: SO sensitive plant files.

Biological Diversity (1)

Forest Plan Standard: Snags are to be retained within the harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels based on published guidelines and models or a minimum average of 1.5 snags per acre greater than 15 inches in diameter and 20 feet in height. Provide specified amounts of coarse woody debris in Matrix management well distributed across the landscape: (1) Provide a renewable supply of large down logs well distributed across the Matrix (2) Coarse woody debris already on the ground should be retained and protected. (Ref: Forest Plan, page 4-61)

Objective: Survey and maintain at least minimum management requirements for dead/down, hardwoods, and snags at both pre and post-project levels.

Methods: Data collected during visual surveys for snag and dead/down densities at 6 timber sale projects. The public was involved during public scoping of NEPA.

Results and Recommendations: Dead/downed wood minimum standards were met in most areas. District policy is to leave any tree or snag deemed a hazard on site as downed wood. Continue monitoring of salvage and green sales for dead standing/down woody material. Forest needs to provide for better coordination between wildlife feedback to timber sale administrators.

Where is data located: Data is in NEPA documents at the Ranger stations.

Biological Diversity (2)

Forest Plan Standard: Survey prior to ground disturbing activities. Surveys for great grey owl. (Ref: Forest Plan page 4-10.)

Objective: To implement survey and manage procedures for great grey owl within the Watershed Analysis areas.

Methods: Performed second year of the two year survey protocol within 1/4 mile of Stillwater Meadow using great grey owl protocol.

Results and Recommendations: Presence of great grey owl was not detected. Great grey owls are not using Stillwater meadows in 1998.

Where is data located: Data is in files located in the Mt. Shasta Ranger station.

Wildlife Management (1) *Interpretive services*

Forest Plan Standard: Develop interpretive/view sites for wildlife viewing, photography, and study. Provide pamphlets, slide shows, and other educational material that enhance the watchable wildlife and other interpretive programs. (Ref: Forest Plan page 4-29.)

Objective and methods: To educate the Siskiyou county school children about forest wildlife through a variety of nature activities. Forest biologist presented 10 to 15 talks on topics including owls, bats and aquatic invertebrates. Talks were given in classrooms and in the field.

Results and Recommendations: Students were excited to learn about the environment and what needs to be done to ensure proper habitat for wildlife. Keeping the public informed concerning wildlife is important for public support for wildlife management programs. The Forest needs to be more involved in education our community about wildlife.

Where is data located: Mt. Shasta Ranger Station wildlife office.

Public Involvement: Educators and students participated.

Wildlife Management (2) *neotropical birds*

Forest Plan Standard: Manage habitat for neotropical migrant birds to maintain viable population levels. (Ref: Forest Plan page 4-29, #25.c)

Objective: To assess neotropical migratory bird populations recovery since the 1991 train derailment chemical spill in the Upper Sacramento watershed. Funding provided by a Partners in Flight grant to PSW-Redwood Sciences Lab through the Shasta-Trinity NF

Methodology: Bird population and habitat data were collected at the riparian habitat represented by Sims and Madrone Campground areas. Mist nets and point counts are conducted 3 times from May-August according to the MAPS protocol. Eight years of surveys have been completed at Sims and Madrone Campgrounds. Over 1000 individuals have been surveyed at Sims and around 60 species of birds were tagged over the 8 year period.

Results and Recommendations: Results from 8 years of monitoring indicate damage to bird populations and also have found Sims Campground to support one of the most important bird communities and associated riparian habitat in California. Estimates are that bird year lost is approximately 12,700 for the Sacramento River over the 8 year period as a result of a chemical spill in the early 1990s

Conclusions are currently being assessed at the Redwood Sciences Lab, research branch of the USFS. Monitoring should continue in 1999

Where is data located: Mt. Shasta Ranger Station wildlife office and PSW Redwood Sciences Lab.

Wildlife Management (3) *habitat improvement*

Forest Plan Standard: A combination of even-aged and uneven-aged timber management practices will be used to achieve desired wildlife goals and objectives and to maintain healthy, vigorous stands. (Ref: Forest Plan page 4-66, #5)

Objective: Design project to improve elk habitat in Reynolds Basin.

Method: Visual assessment of existing elk habitat.

Results and Recommendations: Schedule 300 acre elk habitat improvement for FY 1999.

Where is data located: Reynolds Basin EA and Mt. Shasta Ranger Station.

Public Involvement: Public scoping during the NEPA process and communication with USFWS.

Resource Management Programs

Fire and Fuels (1)

Forest Plan Standard: Plan and implement fuel treatments emphasizing those treatments that will replicate fire's natural role in the ecosystem. (Ref: Forest Plan, page 4-17 #8 d)

Monitoring Objectives: Monitor environmental analysis process and post-burn summaries to insure that fuels reduction objectives are being met.

Methods: Flats Underburn, 1998. A burning plan was evaluated to determine if burn objectives were met. The evaluation was based on a fuels inventory and a photo series taken at the site of the burn.

Note: Burn plans are prepared for every proposed burning project. They are designed to meet the fuels objectives and mitigations described in the environmental analysis (EA) for the project area. Burn plans are signed by the responsible line officer and the assigned burn boss. Close coordination and monitoring is maintained between the Forest Service burn boss and the Air Quality Control Board, Forest Service Dispatch and the Sheriff's Office.

Results: Monitoring evaluation of the Flats Underburn showed that target accomplishments were 75-100% successful. Both the consumption rates and scorch heights were within acceptable limits. Team members found that the project favorable met the objectives.

Recommendation: Team members recommend continuation of program and monitoring.

Public Involvement: The public is closely involved with our burning program. Frequently pre-burn meeting and field trips are held with local organization. Pre-burn notices are also circulated to local post offices, newspapers and radio stations. Adjacent landowners are routinely notified of Forest Service burn projects.

There is also public education program in the schools to inform students of the fuels programs and objectives.

Where is data located: Burn plans and post-burn summaries are located at the local Ranger District Offices.

Fire and Fuels (2)

Forest Plan Standard: Activity fuels that remain after meeting wildlife, riparian, soil, and other environmental needs will be considered surplus and a potential fire hazard. The amount and method of disposal will be determined in the ecosystem analysis. (Ref: Forest Plan, page 4-17 #8c)

Monitoring Objectives:

FY 1998 Activity Fuel Treatment Review, South Fork Management Unit. Evaluate the effectiveness of prescribed fuel treatments to adequately treat excess activity fuels within various site-specific resource and environmental constraints.

Methods: All areas were visited prior to logging during the NEPA stages where photo series and team expertise as used to estimate the count of activity fuels likely to be generated on a unit-by-unit basis for each timber sale. If there was to be no reforestation (e.g.. thinning) activity fuels were treated to meet hazard reduction objectives. In areas where reforestation was to take place, fuels specialists and silviculturists worked together to prescribe the appropriate method of fuel treatment. All treatments, both for hazard reduction and site-prep were developed and refined by interdisciplinary teams for each project.

Results: Pre-burn fuels inventories were conducted. When possible a post-burn fuels inventory was taken, otherwise a visual site assessment was performed. A total of 355 acres of prescribed activity fuels treatments were successfully implemented.

Recommendation: Funding and personnel are not currently available to fully conduct pre and post-burn inventories. Acquire additional funding for future programs.

Public Involvement: Although there was no formal involvement this year, local citizens groups routinely review timber sales on the unit.

Where is data located: Burn plans and post-burn summaries are located at the local Ranger District Offices.

Monitoring Objectives:

FY 1998 BD Tractor Piling Hazard Reduction Review, Shasta-McCloud Unit. To determine if adequate clean-up was accomplished by tractor piling hazard fuels.

Methods: Visual evaluation and informal discussions.

Results: In FY 1998 all 830 acres that were tractor piled met targets. Hazard reduction is being accomplished successfully after timber harvest activities.

Recommendation: Continue to monitor the hazard reduction program that is in place.

Public Involvement: None

Where is data located: Fuel Treatment Plan folder is located in the Fuels Office at the McCloud Ranger District.

Timber Management (1)

Forest Plan Standard: Allowable Sale Quantity (ASQ). Yields from suitable lands will be chargeable toward the ASQ. The suitability of land for timber production will be field verified at the project level using the timber suitability criteria shown in Appendix I of the Forest Plan. (Ref: Forest Plan page 4-26, #20a., and page 5-13, Timber)

Monitoring Objective: The objective is to determine if the timber sold in FY 1998 meets the ASQ level specified in the Forest Plan.

Method/Data Collected: Information on timber products offered and sold is collected at the district level and compiled at the forest level into a national database called the Sale Tracking and Reporting System (STARS). The FY 1998 Forest Management Attainment Report (MAR) is used to report forest accomplishments, including timber volume offered and sold.

Results: The timber volume offered for sale in FY 1998 totaled 82.1 MMBF. This was slightly higher than the 82.0 MMBF allowable sale quantity as stated in the Forest Plan. The average annual timber volume offered for sale since the signing of the Forest Plan in 1995 is about 70 MMBF, or about 85% of the ASQ.

Recommendations: Continue monitoring annually to determine the average annual output for the 10 year period of the Plan.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: STARS data and the FY 1998 Forest MAR report are located in the Supervisor's Office in Redding, CA.

Timber Management (2)

Forest Plan Standard: Silvicultural Systems/Harvest Methods. Emphasize the regeneration harvest of understocked and poorly growing stands, whether using even or uneven-aged systems. Intermediate cuttings in overstocked stands (thinning) and the salvage of dead and dying trees will also be emphasized. (Ref: Forest Plan page 4-26, #20e)

Monitoring Objective: The objective is to determine if silvicultural systems and harvest methods prescribed in FY 1998 timber sales are following the prescriptions specified in the Forest Plan.

Method: Information was compiled through review and collection of volume per acre data from individual timber sale EAs and contracts sold in FY 1998.

Data Collected: Volume and acres of regeneration cutting and intermediate (thinning) and salvage cutting in FY 1998 timber sales.

Results: The Forest did not meet annual regeneration cutting objectives, but exceeded the intermediate and salvage cutting objectives in FY 1998, as follows:

	Forest Plan Objective	FY 1998 Accomplishment
Regeneration Cutting-Volume (MBF)	66,000	1,800
Regeneration Cutting-Acres	3,500	107
Intermediate Cutting-Volume (MBF)	12,000	64,600
Salvage Cutting-Volume (MBF)	4,000	15,800

Recommendations: The Forest needs to place additional emphasis on regeneration cutting in the future in order to meet long-term sustained yield timber objectives as specified in the Forest Plan. Continuation of current silvicultural practices would require an amendment to the Forest Plan.

Public Involvement: Public involvement occurs during NEPA at the project level. Extensive public involvement occurred during the preparation of the Forest Plan.

Where is data located: Timber sale EAs and contracts are located in the Supervisor’s Office in Redding, CA.

Timber Management (3)

Reforestation

Forest Plan Standard: Achieve stocking standards of well distributed trees within five years of final harvest (unless otherwise certified by a certified silviculturist as meeting ecosystem objectives) under all silvicultural methods. (Ref: Forest Plan page 4-26, #20g, and page 5-13, Timber)

Monitoring Objectives: The objectives are to 1) determine if reforestation goals are being met, and 2) determine if regeneration harvest areas are being adequately stocked within five years.

Method: Information on reforestation accomplishment was taken from the FY 1998 Silvicultural Accomplishment Report. Information on regeneration status was taken from the FY 1998 Status of Reforestation Report.

Data Collected: FY 1998 reforestation acres accomplished and FY 1993 regeneration harvest acres certified for reforestation in FY 1998.

Results: Reforestation acres accomplished in FY 1998 totaled 1861 acres. This is about 47% less than the 3500 acres projected in the Forest Plan because the Forest has emphasized thinnings and salvage more than regeneration cutting during the past few years.

Of the 2040 acres of regeneration harvest accomplished in FY 1993, 1920 acres (94%) were certified as adequately stocked in FY 1998. The remaining 120 acres were not certified due to inadequate stocking.

Recommendations: Continue monitoring annually.

Public Involvement: No direct involvement.

Where is data located: The FY 1998 Silvicultural Accomplishment Report and the FY 1998 Status of Reforestation Report are located in the Supervisor's Office in Redding, CA.

Timber Management (4)

Forest Plan Standard: Timber stand improvement projects will emphasize maintaining or improving growth, and healthy, vigorous trees, through release and thinning. (Ref: Forest Plan page 4-27, 1, and page 5-13, Timber)

Monitoring Objective: The objective is to determine if timber stand improvement goals are being met.

Method: Information on TSI accomplishment was taken from the FY 1998 Silvicultural Accomplishment Report.

Data Collected: FY 1998 TSI acres accomplished.

Results: TSI acres accomplished in FY 1998 totaled 8901 acres. This was more than the 5300 acres (168%) projected in the Forest Plan because the Forest still has TSI work in plantations created prior to the implementation of the Forest Plan.

Recommendations: Continue monitoring annually.

Public Involvement: No direct involvement.

Where is data located: The FY 1998 Silvicultural Accomplishment Report is located in the Supervisor's Office in Redding, CA.

Biomass (1)

Forest Plan Standard: Incorporate biomass opportunities into ecosystem analysis and project proposals that meet ecosystem objectives, such as dead/down material for wildlife and ground cover for soil protection, and to reduce fuel loading to complement the natural fire regime. (Ref: Forest Plan page 4-14, #3a)

Monitoring Objective: Determine if biomass opportunities have been incorporated into project proposals.

Method: Information on biomass volume offered and sold was compiled through the review and collection of volume data from timber sale contracts sold in FY 1998.

Data Collected: Volume of biomass sold in FY 1998.

Results: No volume targets for biomass were established in the Forest Plan. Actual accomplishment in FY 1998 was about 40,000 MBF of biomass sold as part of the Forests' regular timber sale program of 80,100 MBF. Biomass opportunities have been emphasized more on the east side of the Forest. This has resulted in a reduction of sawlog volume sold on the east side. Biomass opportunities have been limited on the west side of the Forest, primarily due to economic considerations.

Recommendations: In the future, greater priority should be placed on sawlog volume when allocating timber dollars (NFTM). Biomass opportunities should be multi-funded, using fuels, wildlife, EM, and other funding sources along with timber dollars to accomplish biomass removal projects.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: Timber sale contracts are located in the Supervisor's Office in Redding, CA.

Facilities Management (1)

Forest Plan Standard: Schedule and perform road maintenance activities to meet management objectives. (Ref: Forest Plan page 4-16, #7a., and page 5-7, Facilities)

Monitoring Objective: To ensure that the Forest road maintenance program meets current regulations and direction.

Method: Informal sampling and on-the-ground visual inspections.

Data Collected: No formal data collected.

Results: Sampling showed that current funding is insufficient to fully maintain roads at 100% of target operational levels. System roads need to be managed and miles/levels reduced to meet resource concerns and investment protection.

Recommendations: Continued emphasis needs to be placed on drainage maintenance. Continue work on access and travel management.

Public Involvement: Through informal contacts and public comments and complaints.

Where is data located: Engineering Department at the Supervisor's Office in Redding, CA.

Facilities Management (2)

Forest Plan Standard: Closures of roads and/or selected areas, to assist in management of the Forests' resources, may be made by regulatory and/or physical devices on the road to meet management objectives for the following purposes: 1. to protect the road surface during the wet season so that maintenance and erosion are reduced; 2. to protect wildlife and/or help meet wildlife management objectives; 3. for safety, fire, and general administrative purposes; and 4. for special closures per Code of Federal Regulations (CFR). (Ref: Forest Plan page 4-16, #7e)

Monitoring Objective: To ensure that the correct road closure process is followed in accordance with current regulations and direction.

Method: Closure Plan review.

Data Collected: Forest road closure plan(s).

Results: Roads were subject to closure in FY 1998 due to unplanned major storm events in January. Closures were due to slides and bridge/culvert washouts.

Recommendations: Continue monitoring. Formal road closure process needs to be followed to ensure correct procedures are followed.

Public Involvement: Public notification and feedback reviewed.

Where is data located: Supervisor's Office, Engineering and at engineering zone offices at Mt. Shasta, Hayfork and Weaverville Ranger Stations.

Facilities Management (3)

Forest Plan Standard: Inspect dams and bridges at prescribed intervals and provide the maintenance necessary to keep them safe. (Ref: Forest Plan on page 4-16, #70)

Monitoring Objective: To ensure facilities are being inspected to determine that they do not pose a threat to public health and safety.

Method: Visual inspection utilizing forest inspection process as required by manual.

Data Collected: Bridge inspection/dam monitoring reports by the Forest bridge inspector.

Results: A renewed effort through contracting for A&E services has caught us up to date on normal inspection timeline, after past years storm events caused a break in the normal routine for inspection.

Recommendations: Maintenance needs to be made more of a priority. Improvements are needed. Need to contract bridge inspections to catch up and ensure schedule is met. The forest needs to emphasize replacement of non standard bridges and major repairs. Some small dams need to be removed from the system and the stream channels put back to more pre-dam conditions, or the structures need extensive cleaning as they are no longer functioning as a dam but more of a sediment catchment.

Public Involvement: Posted information and public comments due to closures.

Where is data located: Engineering department in the Supervisor's Office in Redding, CA.

Facilities Management (4)

Forest Plan Standard: Monitor potable water sources and designated swimming areas according to the Safe Drinking Water Act and other regulatory health requirements. (Ref: Forest Plan page 4-16, #7p.)

Monitoring Objective: To ensure potable water sources provide water safe for public and employee use.

Method: Discussions with engineer who maintains program documents.

Data Collected: Bac-T Testing, water sample test results are part of normal programs. These were randomly checked and discussed.

Results: Program is being monitored according to regulations, except for the following stations: Sims, Ash Creek, and Big Bend which are not reporting as required.

Recommendations: Continue monitoring program with renewed efforts to get SMMU to send all sample testing results.

Public Involvement: Public was not involved in monitoring but was notified as required of poor test results.

Where is data located: Engineering department in the Supervisor’s Office in Redding, CA.

Forest Pest Management

Forest Plan Standard: Implement an integrated pest management (IPM) program to maintain or reduce forest pest impacts to acceptable levels and to maintain or enhance forest health and vigor. (Ref: Forest Plan page 4-18 #b)

Monitoring Objectives: Conduct yearly aerial surveys to monitor and develop a database of mortality statistics on the Forest.

Results:

Conifer Mortality on the Shasta-Trinity National Forests

Year	Pine Acres	Fir Acres	Mixed Conifer Acres	Total Mortality Acres
1994	15,259	10,871	0	26,130
1995	5,080	553	3,327	8,960
1996	7,712	3,242	514	11,468
1997	7,557	6,464	5,531	19,552

Mortality was very low during 1998 due to a cumulative effect of favorable winter precipitation since 1993. Similar patterns have been monitored in the past. We are essentially “storing mortality on the stump”, and there will be a wave of conifer mortality when drought conditions return. Background mortality for the Shasta-Trinity NF has been calculated at 32.08 BF/acre/year for the entire forest, or 59.55 BF/acre/year for the acres identified as “suitable” in the LMP.

For more information regarding the Forest Health in California, refer to the Forest Pest Conditions in California - 1998 published by the California Forest Pest Council.

Recommendations: Continue monitoring

Where is data located: Supervisor’s Office, Redding, CA.

Web Site: Information is now available on the Web. See www.fs.fed.us/r5/spf/.

Range Management

Forest Plan Standard: Manage rangeland vegetation and livestock grazing activities in order to meet and/or provide for desired ecosystem conditions, including the sustainability of forage for livestock and wildlife and the attainment of the Aquatic Conservation Strategy and proper management of Riparian Reserves. (Ref: Forest Plan Goals, page 4-5 and Forest Plan Standards, page 4-22)

Key questions include:

- Is range condition and utilization being monitored and are Forest Plan range standards and guidelines being applied and let in riparian as well as upland areas?
- Is land suitable for livestock grazing being identified and appropriate management concepts being applied?
- Are the appropriate procedures and documentation being used in range planning, administration and monitoring?

Objective: Determine if rangeland ecosystems are healthy, if livestock/wildlife forage is available on a sustainable basis and if proper management of this resource and its associated attributes is occurring.

Methods: Two of the Forests 20 grazing allotments were vacant, thus information monitored was based on 20 active allotments. Of these 10 were monitored more intensely than the others. Information can be found in the Annual Grazing Statistical Report which is kept in the Forest Supervisors Office.

Both hard wire and electric fence systems were put in on four allotments in an effort to monitor use and management of riparian. Range readiness checks were made on each of 20 active allotments. Distribution of livestock use, utilization checks and suitability of range within several allotments was checked to determine if management objectives and Forest standards and guidelines were being met. Annual operating plans were developed through coordination with the Permittees and local county extension service agents. Permittees were required to maintain allotment structures, including electric fences. Permittees were also responsible for maintaining proper distribution of their livestock. Basic standard for utilization included taking half and leave half of the current years growth on key plant species. To help in this effort, small cages were used in some areas for comparison purposes. Photos were taken in many areas of representative allotments for analysis and comparative purposes. The photos are compared to similar photos from previous years. Some allotments on the Trinity side include areas that are composed of annual rangelands. An ocular estimate of residual vegetative matter was made in representative areas. Some also include portions of transitory range, many of which were monitored to determine amount lost to succession.

Overall Results:

Standard or Objective	Activity	Accomplishments
Provide for proper management of selected riparian areas.	Riparian areas monitored and/or protected.	12 sites/65 acres
Designate lands that are suitable for livestock grazing	Determination of suitability	500 acres
Ecosystem analysis, NEPA documents and Annual Operation instructions is the primary tool for implementing management actions.	Annual Operating Instructions prepared and/or carried over.	20
WA & NEPA documents shall be prepared to bring authorized grazing use into conformance with Forest Plan objectives	Preparation of NEPA documents	Began work on WA/NEPA package for Sailor Bar
Verify range readiness, proper utilization and distribution on active allotments.	Range readiness, Utilization & Distribution checked	20 Allotments
Proper range allotment administration to regional/provincial standard including above items plus additional work	Range readiness, Utilization & Distribution checked to Provincial full standard	6-11

Yearly utilization measurements indicate that some areas might be able to sustain higher utilization levels while others may need less utilization. While use in some riparian areas exceeded utilization standards, overall results were determined to be consistent with Forest Plan standards and guidelines. The ecological status information collected will be correlated with integrated vegetative inventories and management plans for the respective allotments. Difficulty was encountered in several areas on the part of the Permittees to maintain riparian electric and/or hard wire fence enclosures because some fences were damaged by wildlife and vandalism. Little use of riparian areas used by listed species of anadromous and little if any of this use took place during key life phases of the species. Primary areas included livestock stream crossings areas that coincided with spawning areas.

Recommendations: Continue monitoring. Examine how range monitoring can be incorporated into the interdisciplinary monitoring of projects. An analysis of selected C&T range transect data is still needed. Continue to work with and include Permittees in development and implementation of AOI (Annual Operating Instructions). Need to develop information on and better understand the relationships of grazing livestock in wet to very wet areas early in season. Need to work closely with NMFS in monitoring and management of allotments the interface with anadromous habitats. Need to develop and implement timely process for completing reissue of permits.

Chaparral

Forest Plan Standard: Assess brushfields for multi-resource management opportunities, and develop project plans for treatment. (Ref: Forest Plan page 4-16).1. Weaverville Chaparral Pre-burn Monitoring

Chaparral Pre-burn Monitoring

Methods: Through ocular observation, many of the shrub fields were found to be decadent and of less value to wildlife than they would be if they were burned. Public scoping took place when the proposed action was developed.

Results and Recommendations: Approximately 1,200 acres are scheduled for burning in 1998.

Where is data located: Data from this project is located at the Shasta Lake District fuels office within the Horse Mountain project files.

Special Areas

Forest Plan Standard: Research natural areas: develop a management plan for each RNA to safeguard the particular values while encouraging intended uses. Prescription X. (special area management, standard and guide #7, p. 4-49).

Monitoring Objective: to document progress in RNA planning and raise awareness of the RNA program at the district level.

Method: phone and mail communication with regional office, PSW station and ranger district staff.

Data Collected: status of current RNA planning documents.

Results: no new RNA management activity in FY 1998.

Recommendations: continue monitoring development of RNA management plans.

Public Involvement: no public involvement.

Where is Data Located: Supervisor's Office and Regional office files.

Public Use and Information Programs

Wild and Scenic Rivers (1)

Forest Plan Standard: Develop Management Plans (Implementation Guides), using the limits of acceptable change process (LAC) for the existing Wild, Scenic and Recreation Rivers. (Ref: Forest Plan, page 4-28 #23)

Results: Implementation Guides have been completed for all four congressionally designated Wild and Scenic Rivers on the Shasta-Trinity NFs. These guides utilize the limits of acceptable change process (LAC).

Recommendations: Continue to evaluate all proposed projects for compliance with the standards and guidelines of the Wild and Scenic River guides. Refer to the recommendation sections in these guides to initiate high priority projects identified during public involvement.

Public Involvement: Public comments were received and incorporated these documents.

Where is data located: Weaverville Ranger District.

Wild and Scenic Rivers (2)

Forest Plan Standard: Protect the existing character within a 1/4 mile boundary on either side of the proposed Wild and Scenic Rivers pending the outcome of their formal classification by Congress. (Ref: Forest Plan page 4-28, #23 Wild and Scenic Rivers).

Method: Public input to the S. Fork of the Trinity Wild and Scenic River Management Plan identified a need to improve the Big Flat Access on the Trinity River. In 1998 the Forest began design and construction of the Big Flat Access. When completed, it will be a showcase of boat access on a Wild and Scenic River. The forest also held its annual National Rivers Cleanup Day on the Trinity River. This year local residents, guides, partners and Forest Service employees all helped to clear over 6,000 pounds of debris on the Trinity River corridor from N. Fork Trinity to Cedar Flat. Debris included two vehicles an old tank and loads of metal and other trash.

Results: Both of these projects have helped significantly to improve the wild and scenic character of the Trinity River.

Recommendations: Continue to conduct high priority projects and maintain active community involvement.

Where is data located: Weaverville Ranger District Office.

Wilderness (1)

Forest Plan Standard: Develop Wilderness Plans (Wilderness Implementation Guides) for each Wilderness using the limits of acceptable change (LAC) process. Designate management zones and allocate transition, semi-primitive, primitive, and pristine opportunity classes as defined in Appendix Q. (Ref: Forest Plan page 4-29, #24a).

Method: Wilderness Implementation Schedules (WIS) will be developed to implement direction from the Forest Plan.

Results: The Mt. Shasta Wilderness and the Castle Crags Wilderness both have completed schedules. The Trinity Alps Wilderness Implementation Guide is still in draft form. However, the Fire Plan in this document has been updated and incorporated in the Forest Fire Management Action Plan which will be finalized in 1998.

Recommendations: Continue to implement the wilderness implementation schedules with the LAC process of monitoring.

Public Involvement: Public comments were received and incorporated in the development of the wilderness implementation schedules.

Where is data located: Supervisor's Office, Redding, California and District Offices.

Wilderness (2)

Forest Plan Standard: Post potential encroachment sites on the boundaries of the five Wildernesses within five years of Plan implementation. (Ref: Forest Plan page 4-29, #24b)

Method: Wilderness boundary posting is an on-going forest program. Posting is routinely conducted in conjunction with timber sale activity adjacent to Wilderness for Forest Service and private lands timber management.

Results: Areas of potential encroachment are monitored and posted.

Recommendations: Continue program.

Where is data located: Supervisor's Office, Redding, California.

Wilderness (3a)

Forest Plan Standard: Initiate visitor information and education programs that interpret and emphasize values and behavior that protect wilderness resources. Post regulations, orders, and/or permits outside the Wilderness boundaries. (Ref: Forest Plan page 4-29, #24f).

Method: In 1998 a grant proposal was submitted to the National Forest Foundation to fund an innovative 2-year wilderness project. Funding was received to develop an electronic kiosk and a volunteer trail restoration program. The electronic kiosk will allow visitors to use computer technology to select a variety of written information and actual video scenes from the Trinity Alps Wilderness. This material is

designed to educate users about wilderness management as well as provide the commonly requested visitor information.

Results: The electronic kiosk will be completed next year. Preliminary tests were enthusiastically received and many comments from pilot users will be studied to improve the final product.

Recommendations: Continue development of electronic kiosk.

Public Involvement: Public comments were received during trial runs of the project.

Where is data located: Weaverville Ranger District Office.

Wilderness (3b)

Forest Plan Standard: Initiate visitor information and education programs that interpret and emphasize values and behavior that protect wilderness resources. Post regulations, orders, and/or permits outside the Wilderness boundaries. (Ref: Forest Plan page 4-29, #24f).

Method: Seasonal wilderness rangers meet visitors and provide them with information. Pamphlets and signs are also posted at all trailheads.

Results: Monitoring by the wilderness rangers found visitors were concerned about two problem areas in 1998. First, was the high frequency of logs blocking trails as a result of El Nino and second, was concern and confusion over the new Regional Order implementing the 10-person, 14-day/site limit policy.

Recommendations: Based on public comments, the Forest will begin the wilderness awareness program earlier in the season. Wilderness information will be provided to the media by the end of April instead of the end of June.

Public Involvement: Public comments are recorded in trip reports by the wilderness rangers.

Where is data located: Weaverville Ranger District Office.

Wilderness (4)

Forest Plan Standard: Maintain surface and sub-surface waters at the "high quality level" as defined by U.S. Environmental Protection Agency standards. (Ref: Forest Plan page 4-29, #24h).

Method: Conduct yearly sampling.

Results: Sampling was not conducted during 1998. No problems were reported.

Recommendations: Establish protocols for yearly sampling and analysis as funding allows.

Where is data located: Weaverville Ranger District.

Recreation (1) *Partnerships*

Forest Plan Standards: Promote partnerships with user groups to assist in the operation, maintenance, and development of recreation sites and facilities (Ref: Forest Plan, page 4-23, r)

Monitoring Objective: Determine if partnerships are being promoted.

Method: On-going monitoring by recreation staff and concessionaires.

Results: The majority of the developed sites within the National Recreation Area are currently managed by concessionaires. Concessionaires manage sites for compliance with ROS classes. During 1998 a partnership was established with the Shasta Lake Improvement Partnership Project Groups. Partnerships were maintained in the NRA with the Redding Dirt Riders, Backcountry Horsemen, the Shasta and Trinity Houseboat Owners Association and the local chambers of commerce. Other partners in recreation on the forest include the Good Sam Club, the Youth Conservation Corps and the Hayfork Recreation and Tourism Group and the Mt. Shasta Service Unit. All these partners are instrumental in maintaining and enhancing recreation sites for forest visitors.

Recommendations: Continue partnerships.

Public Involvement: Direct involvement with partners.

Where is data located: Supervisor's Office, Redding, California.

Recreation (2) *Interpretive services*

Forest Plan Standard: Provide interpretive services to direct visitors to their recreation destinations, to facilitate understanding of resource management activities, and to acquaint them with unique or special features on the Forests and the function of forest ecosystems. Complete a recreation opportunity guide (ROG) for each ranger district. Highlight special places, theme areas, and unique recreation opportunities. (Ref: Forest Plan, page 4-23, #16 g., k)

Monitoring Objective: Determine if interpretive services are being provided and ROGs are available for each ranger district.

Results: Over 15 ROGs were updated and printed for both the Shasta and Trinity Units of the NRA. The Shasta Lake Visitor Information Center and the Weaverville Front Office were both staffed during the 1998 season. The NRA also provided special campfire programs, trail hikes and junior ranger talks from Memorial Day through Labor Day. Two interpretive exhibits that featured wildlife were installed in developed recreation sites.

Recommendations: Continue providing interpretive services including updating ROGs as needed.

Public Involvement: Direct involvement with public.

Where is data located: Ranger District Offices.

Recreation (3) *OHV*

Forest Plan Standard: Cooperate with the State, other agencies, and user groups to identify potential OHV trails. Where compatible with management objectives, develop segments of OHV trails that support the concept of a statewide OHV trail system. (Ref: Forest Plan, page 4-23, #16 f.)

Method: The Forest continued work in 1998 with other agencies and user groups to locate the Shasta-Trinity NF portion of the California Back Country Discovery Trail. Segments were located and survey work was started on forest segments of the Trail. NEPA work, survey and design were also started on the Texas Point, Mango Link Obstacle Course.

Recommendations: Continue partnerships

Public Involvement: Direct involvement with OHV user groups and communities.

Where is data located: Ranger District Offices.

Recreation (4) *Roads*

Forest Plan Standard: Prescription II, Limited Roaded Motorized Recreation: Road density for existing and new roads will be planned and managed to ensure that user contact does not exceed low to moderate levels. (Ref: Forest Plan, page 4-45); Prescription III, Roaded Recreation: Roads and trails should be located, designed, constructed and maintained so that they are compatible with Roaded Natural Recreation Opportunity Spectrum (ROS) activities. These activities include hiking, auto touring, wildlife viewing, OHV use, cross-country skiing, snowmobiling, and horseback riding. (Ref: Forest Plan, page 4-65); Prescription IV, Roaded High Density Recreation: New roads and trails will be constructed for the purpose of accessing fishing trails, interpretive trails, or providing links to primary trails. These roads and trails will be located, designed, constructed, and maintained to standards which complement Rural Recreation Opportunity Spectrum (ROS) activities. (Ref: Forest Plan, page 4-48)

Monitoring Objective: Determine that roads location, densities, construction and purposes are consistent with each of the recreation forest prescriptions.

Method: Informal staff review.

Results: For Prescription II, current road density levels (within the NRA) ensure that user contact does not exceed a low level. No new roads were constructed in the NRA in 1998. For Prescription III, Trails were only maintained for safety problems due to budget limitations. See OHV section for new trail construction projects. In Prescription IV areas, no new roads or trails were constructed in 1998.

Recommendations: Continue monitoring.

Public Involvement: Direct involvement with OHV user groups and communities.

Recreation (5) *Safety*

Forest Plan Standard: Provide a safe, usable, and convenient passage through the project area or a reasonable detour during the entire period of project activities. As a minimum, detours will consist of temporary route markers and a four foot wide travel way cleared of vegetation. Tread work will only be performed to allow safe stock passage. (Ref: Forest Plan, page 4-23, #16 b.2)

Method: During the implementation of the Jones Valley and McCloud Bridge Rehabilitation projects it was decided there was no way to provide safe passage to the public, so the areas were closed to the public for the duration of the project.

Recommendations: Continue to evaluate and monitor public safety in recreation areas. Keep closure as an option to protect public safety.

Where is data located: McCloud Ranger District Office.

Visual Quality

Forest Plan Standard: Maintain a diversity of scenic quality throughout the Forests, particularly along major travel corridors, in popular dispersed recreation areas, and in highly developed areas. (Ref: Forest Plan Goals, page 4-5)

Monitoring Objective: Assess integration of visual quality standards in forest management activity.

Method: The 1998 visual quality program focused on: (1) designing the upgrade of several developed recreation sites, (2) sponsoring the proposal for a new Scenic Byway (the Shasta Volcanic Scenic Byway, and (3) initiating an accessibility evaluation of recreation sites with an emphasis on visual quality. Construction and upgrade of the recreation sites will begin in FY1999. The Scenic Byway proposal will be submitted by the end of FY 1999.

Results: Projects will be monitored for implementation of proposed objectives.

Recommendations: Continue development and implementation of proposals.

Public Involvement: Boxholder mailings for the proposed Volcanic Scenic Byway the Forest were sent to residents in the areas of Mt. Shasta, McCloud and Weed. Public meetings were held in these areas and approximately 35-40 people attended each meeting and provided input. County Supervisors in Siskiyou, Shasta and Lassen counties have also been briefed by the Forest. The upgrade to the McCloud River complex of recreation sites has also had extensive public involvement. Several public meetings were held and some project alternatives were dropped or modified as a direct result of information gained at those meetings.

Where is data located: Recreation and visual quality program office, Supervisor's Office.

Heritage Resource Management (1)

Forest Plan Standard: Proposed projects will comply with inventory procedures, evaluate sites for eligibility to the National Register of Historic Places (NRHP), and mitigate adverse effects to eligible sites. (Ref: Forest Plan, page 4-16, 6. Heritage Resources, d, e, i.)

Monitoring Objectives: To determine the effectiveness of the inventory guidelines in the Forest Plan, to monitor Forests' progress in evaluating places for the National Register as required by the National Historic Preservation Act; and to determine if Forests' mitigation of adverse effects follows current direction.

Prior to FY 1997, inventory requirements varied from project to project under 36 CFR 800 that says to identify all places eligible for the National Register. The Forests attempted to evaluate as many places as possible for the Register that were in project areas, depending on funding. Beginning in FY 1997, the Forest's inventory procedure was changed by a programmatic agreement with the State of California.

This agreement specifies that all undertakings must be surveyed intensively, rather than the variable procedures described in the Forest Plan guidelines. In FY 1997, the new programmatic agreement eliminated this requirement, but did require that a number of properties be evaluated each year as negotiated by the two agencies.

Methods: The FY 1998 Heritage Management Report was completed and submitted to the Regional Office and the FY 1998 Annual Report for the Section 106 Programmatic Agreement was completed and submitted to the State of California. Both of these documents address compliance with inventory procedures, evaluation of sites for eligibility to the NRHP and mitigation of adverse effects.

Data Collected: There were 56 projects inventoried during FY 1998 for a total of 18,467 acres surveyed. From these surveys, 42 sites were recorded and 12 sites were evaluated for eligibility to the NRHP. No projects were conducted in FY 1998 that required mitigation of adverse effects.

Results and Recommendation: Based upon monitoring reviews by the State of California and the FS Regional Office, the Forest is complying with the inventory standards described in the Agreement.

The number of sites evaluated for eligibility for the Register was sufficient for FY 1998. The number of places to be evaluated in future years is guided by a Section 110 plan agreed to by the Forest and the State. Current evaluation efforts are limited by budgets. Funding sources need to be identified to pay for evaluations

For more information related to accomplishments of these objectives, refer to both the FY 1998 Heritage Resource Management Report and the FY 1998 Annual Report for the Section 106 Programmatic Agreement prepared by the Forest Archeologist.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: Heritage program office, Supervisor's Office.

Heritage Resource Management (2)

Forest Plan Standard: For Prescription XI sites, achieve full compliance with Section 106 and develop required protection plans. (Ref: Forest Plan, page 4-50, D3, D12)

Monitoring Objectives: To ensure that Forests' program of work is in compliance with Section 106 and 36 CFR 800. Determine if plans have been completed for significant heritage resources and determine if sites are being monitored sufficiently.

Methods: Both the FY 1998 Heritage Management Report and the FY 1998 Annual Report for the Section 106 Programmatic Agreement describe Forest compliance with Section 106.

Data Collected: Monitoring was recorded at 17 historic properties around the Forests, most of which were Prescription XI sites. No protection plans were prepared during FY 1998.

Results: In FY 1998, the vast majority of projects fell under the Programmatic Agreement for Section 106. Based on the monitoring of sites, the Forest appears to be in compliance with the Programmatic

Agreement of Section 106. Reviews by the State Historic Preservation Office and Region 5 support this conclusion.

Recommendation: Section 106 compliance appears to be in compliance with the requirements of the Programmatic Agreement and other direction at the present time. In some cases monitoring sites needs to be more frequent and priority of monitoring needs to be given to Prescription XI sites within proposed actions.

Interdisciplinary Involvement: Information resulting from archaeological studies is being shared with other specialists preparing watershed studies.

Public Involvement: Public involvement occurs during project level NEPA.

Where is data located: Heritage program office, Supervisor's Office

Results Table:

Standard or Objective	Number	Acres/Sites
Conduct a cultural resource survey before all ground-disturbing activities.	56 projects	18,467 acres
Evaluate sites for eligibility to the National Register	42 recorded	12 evaluated

Law Enforcement

Forest Plan Standard: Protect the public interest by a thorough and aggressive program of violation prevention, violation detection, investigation and apprehension of violators and the presentation of cases for prosecution. (Ref: Forest Plan page 4-21, #13)

Monitoring Objectives: Monitor number of reported incidents on a yearly basis.

Methods: Data is recorded yearly by Law Enforcement staff in the LEMARSs report.

Results: Data was not available for FY 1998 at reporting time due to a change in reporting systems.

Recommendation: Continue monitoring.

Where is data located: Supervisor's Office, Redding, California.

Social and Economic Environment

Adaptive Management Area

Forest Plan Standard: Development, demonstration, implementation, and evaluation of monitoring programs and innovative management practices that integrate ecological and economic values. (Ref: Forest Plan, page 4-69, Technical Objectives).

Monitoring Objective: To report implementation and effectiveness of actions that lead towards the goals and objectives for the Hayfork Adaptive Management Area.

The Small Diameter Demonstration Project

The small diameter demonstration project completed its second year of operation in 1998. It is being conducted in partnership with the Hayfork Watershed Research and Training Center and has made significant contribution toward the objectives of the Hayfork Adaptive Management Area. Results include:

1. Development of the Hayfork yarder designed specifically for harvesting densely spaced, small diameter trees.
2. Demonstration of the economizer small diameter processor; a compact, mobile lumber mill that can process logs from 3 inches to 10 inches in diameter.
3. Implementation of a 40 acre thinning project that contributed to forest health and fuel reduction objectives while providing small diameter material to test the Hayfork yarder and economizer.
4. Monitoring the ecological impacts of the new logging system and slash treatment methods showed that hand piling slash for future burning resulted in the most soil compaction.

Socio-Economic Monitoring

During FY 1998 the report “Community-based Socioeconomic Assessment and Monitoring of Activities Related to National Forest Management” was published through the Hayfork Watershed Research Training Center. The Forest has helped the Watershed Center fund and staff this project since 1996. This year’s report presents key findings on Trinity county income and unemployment related to timber harvest volumes and values. Monitoring of National Forest work explores the relationship of the size and type of timber sales versus the award of contracts to Trinity purchasers.

Grassy Flats Stewardship Project

As a result of the Appropriations Act (H.R. 4328) Congress gave the Forest Service authority to pilot test new land stewardship approaches. The Grassy Flats proposal on the Trinity NF was one of 28 projects selected. This will administered through a service contract in which the Shasta-Trinity NF will be issuing a negotiated contract for commercial thinning, shaded fuelbreak construction, fuels treatment, road maintenance/decommissioning and timber stand improvement activities on National Forest Land. It is expected that the contract will be a multi-year project beginning in 1999.

Rural Development (1)

Forest Plan Standard: Cooperate in the research and development of rural economic opportunities for new forest products consistent with existing law, financial realities, and known environmental constraints. (Ref: Forest Plan, page 4-5 #26).

Monitoring Objective: Assess effectiveness of N.W. Forest Plan Economic Adjustment Initiative.

Method: Administration of a Rural Community Assistance Grant to the Hayfork Watershed Research and Training Center.

Results: This grant (1) provided advanced ecosystem management training program focused on survey, inventory, and monitoring (2) monitored socio-economic trends in Trinity County to continue compilation of data--provide agencies and other stakeholders a way to measure impacts of their activities. (3) developed a multi-site, multi year small diameter utilization and marketing program; (4) supported three local Community Action Teams focused on: tourism enhancement, redevelopment of the abandoned Hayfork Mill Site, the county CALWORKS job creation plan as it relates to forestry, and increased local capacities through participation in workshops and conferences. Results also found that many of the small rural communities lack the basic know-how and capacity to make an organized effort leading to economic diversification.

Recommendations: Contracts for survey and inventory need to be bundled to provide a greater opportunity for year round employment. Before implementation of the NWEAI five years ago, participating agencies should have agreed to standardized ways of measuring/monitoring accomplishments--and such monitoring should be required as an integral part of the grant agreement. The results of the small diameter utilization program look very promising and need to be shared with a broad audience. Community based forestry requires commitment by government agencies and private land owners to nurture this opportunity to success.

A five year period is not sufficient for small rural communities that have been heavily dependent on National Forest timber outputs to start from "ground zero" and make major changes leading to economic diversification. Need to extend the NWEAI for another 3 to 5 years.

Public Involvement: Key individuals were identified and personally recruited to assist in project assessments.

Where is data located: Shasta-Trinity National Forests Supervisor's Office.

Rural Development (2)

Forest Plan Standard: Work with rural communities to help diversify their economic base. (Ref: Forest Plan, page 4-5 #7).

Monitoring Objective: Assess effectiveness of N.W. Forest Plan Economic Adjustment Initiative.

Method: 17 rural community assistance grants were awarded in FY 1998 for a total of \$491,723. This was enhanced by \$194,327 in matching contributions from grant recipients. Four of the grants were focused on building community capacity to become more effective in competing for Federal, State, and county contracts, planning to enhance community infrastructure to become more competitive in recruiting industry. Nine of the grants were focused on tourism projects ranging from technical assistance provided by a tourism extension agent, to preparation of media kits promoting Northern California for the National Outdoor Writers Conference sponsored in Redding, CA in June 1998 for over 500 outdoor writers, to development of a nomination proposal for a potential National Scenic Byway, and planning for a major destination trail system in the Weaverville basin of Trinity County. One of the grants focused on continued development of a marketing cooperative based on cottage industry goods, and another grant seeks to development community based forestry through service contracts.

Results and Recommendations: Many of the small rural communities lack the basic know-how and capacity to make an organized effort leading to economic diversification. Tourism enhancements are beginning to generate economic diversification in some rural communities. However, a coordinated effort is required to more effectively capitalize on this potential. Cooperative marketing efforts require skilled coordination, in the form of a paid staff to initially succeed and perpetuate themselves. And the cooperative needs to be of sufficient scale to generate revenues which will support the staff positions. Community based forestry requires commitment by government agencies and private land owners to nurture this opportunity to success.

A five year period is not sufficient for small rural communities that have been heavily dependent on National Forest timber outputs to start from “ground zero” and make major changes leading to economic diversification. Need to extend the NWEAI for another 3 to 5 years.

Where is data located: Shasta-Trinity National Forests Supervisor’s Office.

Community Development/Partnerships (1)

Forest Plan Standard: Emphasize the development of partnership programs through coordination with interested public and agencies (Ref: Forest Plan, page 4-5 #28).

Monitoring Objective: Assess the progress in developing partnerships with interested public and agencies.

Media Partnership: The Forest partnered with Record Searchlight to promote the Yolla Bolla Middle Eel Wilderness as an attractive alternative to the many areas snowed out from El Nino weather influences in 1998. A newspaper reporter and photography joined forest representatives for a 2 day wilderness trip. This effort resulted in 3 major new stories.

- **Upper Clear Creek Watershed Coalition:** This partnership of multiple agencies and landowners, which started in 1997, completed a draft in 1998. The Upper Clear Creek Watershed Analysis covers an area of approximately 150,000 acres and will provide a strong basis for support of grant applications (CALFED) in order to address high priority action items in the watershed.
- **Film Commission Partnership:** The Forest has championed the formation of a Film Commission to promote marketing of Northern California as a prime location for the filming and advertising industries to work in. The commission includes Federal agencies and 9 counties who expect to see an economic benefit result from the work of their partnership.
- **Trinity County Tourism Partnership:** Participated in development of a multi-agency and private industry Tourism Promotion Council for Trinity County. The goal is to increase economic diversification.
- **Television Documentary of Shasta Lake:** Joined television station KRCR to develop a 30 minute program on the history and building of Shasta Lake and to highlight the many recreational opportunities offered there today.
- **Volcanic Scenic Byway Partnership:** The Forest participated in the formation of an interstate, multi-agency, private industry partnership to develop a proposal for a scenic byway that would connect Crater Lake National Park, Lava Beds National Monument, Tule Lake Wildlife Refuge, Klamath N.F., Shasta-Trinity N.F., Lassen N.F., and Lassen Volcanic National Park. The Shasta-Trinity helped lead presentations to 3 county boards of supervisors and 7 public meetings to build understanding and support for the proposal. Increased tourism benefits to the counties are anticipated from this scenic byway.

- **National Outdoor Writers Conference:** The Forest participated with multiple agencies and private industry representatives to host a national conference for outdoor writers. The conference was successful in gaining national media coverage of outdoor recreation opportunities in Northern California.
- **Shasta Lake Partnership:** Formed a partnership with resort and marina owners and campground concessionaires to address key issues on Shasta Lake. An outcome of this partnership was the establishment of a “fee retention program” which allows special use permit revenues to be retained locally to improve recreation facilities. An example is the need to mark underwater boating hazards across thousands of acres on the surface of Shasta Lake.

Where is data located: Shasta-Trinity National Forests Supervisor’s Office.

Tribal Government Program (1)

Forest Plan Standard: Develop partnerships with Native American tribes and consult with Native Americans at the planning and project level of analysis. (Ref: Forest Plan page 4-4 #7, and page 4-50 #4)

Monitoring Objectives: The objective of monitoring the Tribal Government Program is to determine if partnerships and the consultation process are established and serving to improve relationships, communication and understanding between the Forest Service and Indian people.

Methods: MOUs are signed with the Pit River Tribe, the Shasta Nation, the Redding Rancheria, and the McCloud Wintu. Participating agreements have been signed with the Pit River Tribe and the Local Indians for Education, Inc. Annual meetings are held with recognized tribes and Native Americans are consulted during scoping and watershed analysis where there are issues of concern.

Results: In FY 1998, consultation continued with Native Americans for projects such as timber sales, special use permits and recreation site improvements. Several watershed studies were completed in FY 1998 that involved scoping with Native Americans. Consultation with Native Americans has been especially appreciated at the McCloud River Complex improvements. Native Americans are involved in the actual construction decisions to locate pathways, and the regrading and revegetation of the upper and lower falls areas.

Native American consultations have been productive in resolving issues arising during project planning. Some projects were modified following consultations. Native Americans are interested in both historical places and areas of current use on the Forest. The Pit River Tribe, the McCloud Wintu and the Hayfork Wintu are the most actively involved tribal groups.

For more information related to these objectives, refer to the Heritage Resource Management Report for FY 1998 prepared by the Forest Archeologist.

Recommendation: Continue consultations and partnerships at current level.

Public Involvement: Direct involvement with tribes.

Where is data located: Supervisors Office, Redding, California.

Monitoring at Other Scales

Forest Plan Implementation

Monitoring Objective: Disclose Forest highlights concerning the NEPA process.

Methods: Informal review of Forests Schedule of Proposed Actions, environmental log, and appeal log.

Results: The Forest initiated a variety of projects for implementation under the NEPA process ranging from the issuance of special use permits, timber harvest, fuels treatments to the improvement of chaparral. No Environmental Impact Statements were prepared in FY 1998. All projects were designed to be consistent with the direction from the Shasta-Trinity National Forests Plan. No non-significant amendments were proposed or issued.

The Quarterly Schedule of Proposed Actions (SOPA) was mailed to approximately 280 individuals or groups.

An administrative appeal pursuant to 36 CFR 215 was filed on one project decision notice. The Responsible Official's decision was affirmed.

Recommendations: Continue to incorporate policies and procedures to improve implementation of the NEPA process and documentation.

Northwest Forest Plan Monitoring

The Flow Timber Sale was monitored on the Shasta-Trinity NFs as part of the 1998 Northwest Forest Plan (NWFP) Implementation monitoring effort. The purpose of this monitoring was to determine whether or not the standards and guidelines from the NWFP were being consistency implemented on these timber sales.

I. Identification of Project:

Flow Multiproduct Timber Sale, Implementation Monitoring Field Review Report, August 5, 1998. Location: Northwest Sacramento Province, Shasta-Trinity National Forest, McCloud Ranger District. Land allocations include matrix and riparian reserves. Team Members: Jim Zander, Bill Branham and Steve Funk, Forest Service, Michael Bornstein, US Fish & Wildlife Service

II. Brief Description of Project: purpose and which units were selected and why:

The primary purpose of this sale was to commercially thin 70-90 year old natural stands. This project was part of the South Flats Forest Health and Ecosystem Management EA. The sale included 7720 MBF on 1565 acres on matrix lands and riparian reserves. Yarding was done by tractor and no new road construction was involved. About half of the sale had been logged at the time of the monitoring field review. The review team visited both logged and unlogged portions of several thinning units.

III. Summary of Findings:

All of the applicable S&Gs were met, according to the District's response to the questionnaire. The review team agreed in all cases, except for the question on the great gray owl. One review team member thought that a 300' no-harvest buffer should have been designated around a meadow. Of the 113 questions in the timber sale questionnaire, 39 were answered "meets," 42 were "N/A," one was answered both "not met" and "N/A" (question 64), and 31 questions did not apply.

IV. Highlights of the Review:

No PAC members participated in the review. Participation of the District representative involved in the planning of the sale provided the team an excellent opportunity to interact and obtain valuable feedback.

V. Recommended Changes for Future Monitoring Efforts:

We need to evaluate our monitoring efforts and determine if they meet the needs and expectations of the various PAC.

Program Accomplishments Table

Ecosystem Analysis	
Forest Resource Management EAs	16
Watershed Analysis	5
Facilities Recreation EAs	19
Late Successional Reserve Assessments	1
Timber Management	
Timber Volume Offered for Sale	82.1 MMBF
Timber Volume Harvested	71.0 MMBF
Fuels Reduction (BD/KV acres)	6722 acres
Timber Stand Improvement (acres)	8901 acres
Reforestation (acres)	1861 acres
Christmas Tree Permits Issued	6249 permits
Firewood sold	8132 cords
Wildlife	
Threatened/Endangered/Sensitive (TES) Species:	
Habitat Structures Installed	10 structures
Habitat Restoration/Enhancement	10 acres
Habitat Inventoried	73,634 acres
Other Wildlife:	
Habitat Structures Installed	21 structures
Habitat Restoration/Enhancement	1500 acres
Habitat Inventoried	4300 acres
Fisheries	
Anadromous Fisheries (includes TES):	
Habitat Restoration/Enhancement	100 miles
Stream Inventory	80 miles
Inland Fisheries (includes TES):	
Habitat restoration/enhancement	250 acres in reservoirs
Monitor inland riparian habitat	250 acres reservoir +1 milestream
Range	
No. of Cattle Grazed	1160
No. of Active Grazing Allotments	20
No. of Permittees	24
Horses	20
Sheep	860
Beefalo	40
Improvements, non-structure	10 acres
Improvements, structures	3 structures
Noxious weed treatment	35 acres

Shasta-Trinity National Forest

Engineering	
Road Construction	0.6 miles
Road Maintenance	414 miles
Road Reconstruction	18.3 miles
Roads Decommissioned	7.0 miles
Fire	
Forest Wildfires	103
Total acres Burned by Wildfires	25 acres
Prescribed Fire	5377 acres
Human Resources Program:	
Youth Conservation Corps (YCC) (enrollee yrs.)	7.7
Senior Community Service Employment Program (SCSEP) (enrollee yrs.)	13.2
Soil/Water/Air	
Water Quality Monitoring	29 BMP sites
Other National Forest Facts:	
Receipts Paid to Counties	\$5,516,696
Receipts From (in dollars):	
Timber Sales	6,864,175
Recreation Special Uses	822,634
Recreation User Fees	55,985
Power	454,102
Grazing Fees	7,527
Land Use Permits	63,795
Forest Plan Allocations:	
Matrix	23%
Adaptive Management Areas	8%
Riparian	13%
Late Successional Reserves	25%
Administratively Withdrawn areas	7%
Wilderness	24%

